

Programación Sección Bilingüe de Inglés. Curso 2018-19

a) Alumnos Participantes:

1ºAB

- 1. Agudo Da Silva, Fínibus Terrae**
- 2. Agudo Díaz, Fernando**
- 3. Alfonso Alejandro, Laura**
- 4. Arce Del Pozo, Manuel**
- 5. Cantero Motera, Cristina**
- 6. Chemsí Souhail, Saad**
- 7. Constantín , Narcisa Loredana**
- 8. Díaz Cama, Rodrigo Máximo**
- 9. Durán Soto, Isabel**
- 10. Durán Vizcaíno, Alba**
- 11. Elhamid Lucas, Ismael**
- 12. Garlito López, Elsa**
- 13. Gómez Naranjo, Marina**
- 14. Granjo Antolín, Idaiara**
- 15. López Lozano, Julia Baoyun**
- 16. Nogales Sierra, Diego**
- 17. Ortega Gómez, Aarón**
- 18. Palomo Valls, María Isabel**
- 19. Pedrero Díaz, María Isabel**
- 20. Pérez Fernández, Alejandro**
- 21. Quiróz Llanos, José Antonio**
- 22. Rocha Ribeiro, Oliver André**

1ºC

- 1. Álvarez García, Carlos**
- 2. Cabrera Maestre, Leonor Úrsula**
- 3. Cabrera Maestre, Moisés Ireneo**
- 4. Carapeto Rodríguez, María**

5. **Cosme De la Cruz, Yanay**
6. **Díez Molina, Pablo**
7. **Fuentes Frontera, Kiara**
8. **Gallego Valares, Elena**
9. **Hernández Félix, Lucía**
10. **Jaramillo Calvo, Rodrigo**
11. **Portero Román, Abel**
12. **Rodríguez Sosa, Saray**
13. **Sierra Visea, Alba**

2ºA/B

1. **Amo Díaz, Alicia**
2. **Apolo Díaz, Sergio**
3. **Barrero Estévez, Daniel**
4. **Caldito Sánchez, Gabriel**
5. **Cantero Báez, Natalia**
6. **Elhamid Lucas, Nadia**
7. **Flores García, Ismael**
8. **Fuentes Salas, Dania María**
9. **Gallardo Carapeto, José Manuel**
10. **Gómez Cáceres, Arturo**
11. **Hernández Colmenar, Carlos**
12. **Marín Márquez, Carlos**
13. **Méndez García, Antonio**
14. **Nogueira Parra, Mariana**
15. **Rivero Herrerías, Indira Fernanda**
16. **Rosado Fariña, Ángela**
17. **Sáenz Martínez-Mediero, Lucas**
18. **Sánchez Anselmo, Laura**
19. **Sánchez García, Rubén**
20. **Villar González-Albo, Carmen**

3ºA/B

- 1. Calvo Seco, Francisco Manuel**
- 2. Cordeiro Oliveira, Marcos**
- 3. Cuéllar Prieto, Alberto**
- 4. Galán Canchales, Lucía**
- 5. Gallardo Rey, Ariadna**
- 6. Galván Fraire, Patricia**
- 7. González Durán, Marta**
- 8. Jiménez Gallardo, Juan Pablo**
- 9. Lacarta Mazón, Aarón**
- 10. León Ayuso, Pablo**
- 11. López Fernández, Víctor**
- 12. Merino Serrano, Lucía**
- 13. Murcia Melgar, Estrella**
- 14. Nogales Arnés, Javier**
- 15. Piñero Martínez, Marta**
- 16. Portilla Ragel, David**
- 17. Risco Chaves, Alba María**
- 18. Silva Mendoza, Laura**
- 19. Suárez Ignacio, Mario**

4ºA/B

- 1. Aleson Orallo, Lucía**
- 2. Cadenas Esteras, Estefanía**
- 3. Chías Navarro, Martí**
- 4. Correa Pérez de Villar, María**
- 5. Díaz Pavanés, Alba**
- 6. Félix Pérez, Emma**
- 7. Gallego Díaz, Lucía**
- 8. Garrido García, María Belén**
- 9. Gómez Granados, Sandra**
- 10. Gómez Romero, Martín**
- 11. Griñón Flores, Blanca**
- 12. Herculano García, Iván**
- 13. Hipólito Hernández, Marina**
- 14. Melgar García, Juan Manuel**
- 15. Méndez García, Carlos**

16. **Morera Leo, Alba**
17. **Ndiaye , Pape Moussa**
18. **Nieto Felipe, Elena**
19. **Pozo Aguilera, Ruth Mary**
20. **Rebollo Bayón, María**
21. **Rodríguez Blanco, Tania**
22. **Rubio Barbero, Julia**
23. **Samudio , Kristel Pamela Carolina**

b) Profesorado participante:

1. **Fernández Mir, Miguel Ángel. NIF 8847038L, especialidad Educación Física y asignatura impartida: Educación Física.**
2. **Hipólito Corbacho, Juan Manuel. NIF 79259205D, especialidad Geografía e Historia y asignatura impartida: Ciencias Sociales**
3. **Muriel Rodríguez, Esther. NIF 6997434Y, especialidad Ciencias Naturales/Biología y Geología, asignatura impartida: Ciencias de la Naturaleza.**
4. **García Martín, Pablo. NIF 36141380 P, especialidad Matemáticas. Asignatura impartida: Matemáticas**
5. **Masa Calles, María. NIF 06981015D, especialidad Inglés. Asignatura impartida: Inglés.**
6. **Aguasantas Cano Rivilla. NIF 8839195L, especialidad Geografía e Historia y asignatura impartida: Ciencias Sociales.**

c) Compromiso del centro con los alumnos:

- Incrementar la información ofrecida al alumnado sobre todas las ayudas y programas de inmersión lingüística promulgados por la Consejería de Educación, así como animarles a participar en ellas y ayudarles en la solicitud y tramitación.
- Potenciar la participación de alumnos en el Proyecto E-twinning y en cada uno de los programas que se pongan en marcha como el Erasmus + donde el inglés sea la lengua de comunicación.
- Potenciar activamente la organización de viajes culturales a países de habla inglesa en la estela de otras ya realizadas, tales como el viaje a Londres .
- Involucrar a los alumnos en actividades relacionadas con la propagación de la cultura inglesa sobre todo aquellas relacionadas con festividades de dicha cultura como por ejemplo Halloween, Thanksgiving etc.

- Ofrecer a los alumnos la oportunidad de realizar intercambios con centros europeos para que valoren la lengua inglesa como vehículo de comunicación a escala mundial.
- Con la sección bilingüe en inglés, queremos hacer partícipes a los alumnos de esa realidad que todos compartimos: el Inglés es actualmente la lengua franca, y como tal, debemos conocerlo, darle la importancia que tiene en el ámbito educativo, económico, cultural y social

d) Compromiso del centro con las familias:

- Asesorar a las familias y hacerles entender la importancia de dar a sus hijos una educación plural desde el multilingüismo y cómo ésta es clave para la incorporación futura de los alumnos al mercado laboral.
- Poner todos los recursos disponibles (Departamento de Orientación, Secretaría, ordenadores, internet etc.) para ayudar a las familias en la tramitación de ayudas de inmersión lingüística y resolver cualquier duda que puedan tener.

e) Algunos objetivos metodológicos que perseguimos:

- Que el alumnado se implique de forma activa para que pueda aprender de su propia experiencia y no de la que le cuenta el profesor.
- Establecer agrupamientos flexibles para cada tarea concreta.
- Aportar creatividad, originalidad, responsabilidad y espíritu emprendedor al aprendizaje del alumnado.
- Dar coherencia a lo estudiado en las áreas implicadas para que los alumnos entiendan la importancia que tiene no sólo en el currículum, sino en su futuro.
- Desarrollar nuevas capacidades y competencias: autonomía, creatividad, responsabilidad, iniciativa, trabajo en equipo, búsqueda de información en diversas fuentes, argumentación, manejo de internet, dominio de la expresión oral y escrita, adquisición de un método de trabajo, etc

f) Algunas notas adicionales sobre la metodología AICLE

El procedimiento metodológico en las disciplinas no lingüísticas de nuestra sección bilingüe de inglés se basa en el Aprendizaje Integrado de Contenidos y Lenguas Extranjeras (AICLE) que presta especial atención a un modelo que permite al alumno una activa participación en la resolución de tareas haciendo uso de otra lengua.

En nuestra propuesta metodológica partiremos de las siguientes premisas: La mayor fuente de aportación lingüística provendrá de materiales textuales y auditivos y por tanto las destrezas más practicadas serán la lectura y la comprensión expresión orales. - La mayoría de las clases se basarán en el uso de textos o de pasajes auditivos de nivel asequible (evitando la frustración sobre todo al principio).

- La lengua se contemplará desde un punto de vista más léxico que gramatical, haciendo más hincapié en el aprendizaje de vocabulario que en el uso de estructuras gramaticales graduadas. La gramática será atendida preferentemente en la clase de inglés.

- Se comenzará con tareas sencillas que permitan que el alumno no se sienta perdido y frustrado. Junto a estas premisas iniciales el trabajo en el aula se sustentará en los siguientes ejes metodológicos:

1. *Enseñanza centrada en el alumno* lo que supone promover la implicación de los aprendices. A la vez este aprendizaje debe promover la cooperación de todas las partes (alumnos y profesor). Todo esto podemos conseguirlo, entre otras, de las siguientes formas: Negociando los temas y tareas. Partiendo de lo particular a lo general. Utilizando ejemplos y situaciones reales. Realizando trabajo por proyectos y trabajo por roles (ej. WebQuests).

2. Enseñanza flexible y facilitadora, atendiendo a los distintos estilos de aprendizaje. Esto implica facilitar la comprensión del contenido y del contexto, lo que se puede conseguir mediante el uso de textos de menor complejidad, llevando a cabo tareas de comprensión, empleando la alternancia en el uso de las lenguas, y también usando diversas estrategias tanto lingüísticas como paralingüísticas como podrían ser: Repetir, parafrasear, simplificar. Ejemplificar, hacer analogías. Gesticular, usar imágenes. Emplear gráficos de organización de ideas, diagramas, líneas del tiempo, etc.

3. Aprendizaje más interactivo y autónomo, aspectos que se pueden promover y desarrollar mediante: El trabajo por parejas y por grupos. Actividades que impliquen la negociación de significado. Desarrollo de trabajo por descubrimiento e investigación. Entrenamiento en estrategias de comprensión y seguimiento de la clase (mostrar falta de comprensión, pedir aclaraciones, distinguir lo esencial, deducir, etc.) Uso de estrategias de evaluación por pares.

4. Uso de múltiples recursos y materiales, especialmente las TIC, lo que aporta un contexto más rico y variado. Por otro lado, este uso promueve también la interactividad y la autonomía del alumno. Este aspecto se lleva a cabo sobre todo con el empleo de recursos digitales y en especial de la Web (textos, podcasts, vídeos, etc) y con el uso de herramientas y espacios de la Web 2.0 (marcadores o favoritos, blogs, wikis y plataformas como e-twinning).

5. Aprendizaje enfocado a procesos y tareas Hay múltiples definiciones del término tarea, elegimos una que nos parece especialmente apropiada para el trabajo en AICLE: "Una tarea es una actividad que requiere que los alumnos usen la lengua, poniendo el énfasis en el significado, para obtener un objetivo" (Bygate, Skehan, and Swain, 2001).

Por tanto *la tarea será la unidad esencial que implicará la realización de una serie de una o más actividades para conseguir realizar u obtener el producto final propuesto en la tarea.* Las mejores tareas serán aquellas que promuevan tanto el aprendizaje de los contenidos de la materia como el uso comunicativo de la segunda lengua. Las tareas deben ser o estar: - Vinculadas a los objetivos del currículo. - Enfocadas al significado y contenido y no a la lengua. - Flexibles y abiertas, tanto en contenidos como en resultados. - Realistas y próximas a los intereses de los alumnos. - Evaluadas tanto en el proceso como en los resultados.

En cuanto a los tipos de tareas se abordarán: Tareas de recepción (escuchar y leer) mediante textos cuyas estrategias lectoras hagan posible que vayan encontrando el significado a medida que el alumno vaya haciendo actividades, en lugar de abordar textos de una forma directa.

Algunas actividades que se pueden utilizar en el proceso para llevar a cabo la tarea serían elegir parte del contenido de acuerdo a un criterio dado; completar tablas, líneas del tiempo, diagramas, mapas conceptuales; tomar notas de datos concretos, fechas; identificar y organizar información o imágenes, corregir errores y, por último, interpretar imágenes. Tareas de producción (hablar y escribir). Éstas son las más complicadas en principio y requieren que el alumno sea apoyado con actividades de andamiaje que le den seguridad. Algunas de las estrategias y actividades que pueden realizarse como parte del proceso de andamiaje y de realización de la tarea pueden ser completar huecos en textos o parte de los textos; responder a preguntas de comprensión del texto o audición; buscar información en distintos recursos: libros, Internet (búsqueda guiada); llevar a cabo "cazas del tesoro" buscando información específica y preparar una presentación oral. Las tareas pueden presentarse en distintos formatos, dependiendo de los medios que se utilicen y de las características del proceso de la

misma. El resultado físico de la ejecución de una tarea puede ser un mural, una presentación en prezi, un documento, una presentación oral, una grabación, etc.

g) Actividades extraescolares

- Excursión a Londres, del 21 al 24 de septiembre. Alumnos de 3º y 4º de ESO
- Inmersión lingüística en Gredos Center, sierra de Gredos. Alumnos de 1º y 2º de ESO.
- Intercambio con un instituto de Secundaria en Alemania, VHG en Bogen. Alumnos de 4º y 3º de ESO. Fechas previstas : mayo para recibir y septiembre para ir.
- Se llevarán a cabo las 3ª Jornada Bilingüe en el IES Bárbara de Braganza. Se invitará a que participen a los colegios de la zona.

h) Auxiliar de conversación

Para el presente curso no nos han asignado ningún auxiliar de conversación, lamentablemente los alumnos no podrán escuchar ni conversar con un nativo de la lengua inglesa.

i) BIOLOGY Y GEOLOGY

2.10. OBJETIVOS, EVALUACIÓN Y CALIFICACIÓN EN BIOLOGÍA Y GEOLOGÍA DE LOS GRUPOS BILINGÜE DE INGLÉS 1º, 3º Y 4º DE ENSEÑANZA SECUNDARIA OBLIGATORIA.

Se tendrán en cuenta los **conocimientos de lengua inglesa (20%)** y los **específicos de la materia (80%)**.

OBJETIVOS DEL INGLÉS EN LA BIOLOGÍA Y GEOLOGÍA EN LA E.S.O.

- a) Comunicarse oralmente en inglés, entendiendo mensajes sencillos y expresándolos a su vez.
- b) Adquirir una comprensión lectora de textos básicos de Biología y Geología, asimilando las estructuras gramaticales propias del idioma (por etapas y con orientaciones concretas del Departamento de inglés).
- c) Saber expresar por escrito conocimientos básicos de Ciencias Naturales utilizando correctamente las estructuras gramaticales del inglés (por etapas) y utilizar el vocabulario específico de la materia en inglés.
- d) Capacidad de comunicarse oralmente al realizar tareas habituales y sencillas. Posibilidad de intercambiar información breve, sencilla y directa, aunque no se pueda mantener una conversación (en 1º E.S.O.), pero sí en 3º y 4º de E.S.O.
- e) Posibilidad de presentar oralmente información básica sobre los contenidos de la materia, utilizando frases y expresiones sencillas.
- f) Utilizar el idioma inglés como medio para conocer y valorar otras realidades sociales.

g) Conocer las expresiones comunes en el diálogo en clase profesor- alumno, alumno-alumno (por ejemplo para hacer las preguntas habituales como para contestar a las preguntas del profesor)

Sabiendo que la mayoría de los alumnos que cursan 1º ESO se inician por primera vez en este idioma, y que aquellos que cursan 3º ESO tienen un nivel muy básico, consideramos no obstante, que esos alumnos a lo largo de un curso deberán adquirir un progreso apreciable.

Para ello se hará hincapié en:

- a) Los aspectos de comprensión, pronunciación, riqueza de vocabulario y escritura, demostrados en actividades y controles escritos (y en menor medida en sus intervenciones orales).
- b) La redacción y su consiguiente exposición pública de informes personales cortos en lengua francesa al final de cada trimestre.
- c) El cuaderno de la asignatura (que podría incluir un vocabulario)
- d) Las pruebas escritas (al menos tres por evaluación), que incluirán cuestiones en inglés.
- e) Pruebas en las que se incluíran listening sencillas empezando en 3º de E.S.O. y de mayor complejidad en 4º de E.S.O.
- f) La conducta, actitud y acierto de las intervenciones en público.

Líneas metodológicas fundamentales en 1º, 3 y 4º de E. S. O.

Teniendo en cuenta el contexto de aplicación de las Secciones Lingüísticas de Inglés, dirigidas a un alumnado que puede que no hayan cursado hasta la fecha estudios en este idioma, se establecen los siguientes objetivos y se propone una metodología inicial que debe ser revisada, pensamos cada trimestre, con la intención de conseguir un dominio suficiente del idioma y un acercamiento a la cultura francesa a lo largo de los cuatro años de la etapa educativa.

Buscamos un proceso gradual en el planteamiento de las clases, las explicaciones tendrán, en un principio, mayor carga en español y se aumentará paulatinamente la comunicación por parte del profesor en inglés. Igualmente, pensamos que el aprendizaje del alumno se dará primero de una forma más pasiva (comprensión) pasando a ser cada vez más activa (expresión). La comprensión oral y escrita es el primer objetivo que nos marcaremos, para el primer trimestre.

Aunque todos estos objetivos deben de trabajarse conjuntamente, algunos se conseguirán antes que otros. Es posible que la comprensión lectora y la comunicación oral se alcancen antes o a un mayor nivel que la expresión escrita. Proponemos que se incida en estos dos objetivos desde 1º de la ESO mientras que la expresión escrita se trabajará más en serio desde 1º de la ESO. En 4º de la ESO tienen que alcanzar los dos objetivos.

Se proponen las siguientes actuaciones:

- a) El alumno bilingüe trabajará el libro de texto de la asignatura que establezca el departamento de Biología y Geología, que será aquél con el que se imparte la asignatura en los otros grupos no bilingües.

b) En el aula, el profesor siempre repasará los contenidos con los alumnos, en español. Se hará de forma sintética y selectiva.

c) En el desarrollo de las clases irán combinando ambos idiomas. Se escribirán en la pizarra los esquemas que resuman y sintetizan los contenidos en inglés. Se podrán traducir estos esquemas en español (opcional), haciendo textos bilingües. Se hará un seguimiento de los cuadernos y se podrán utilizar como ejercicios calificables tanto de vocabulario como de ortografía y gramática francesas.

d) Se dispondrá de un "Workbook". De cualquier forma, se plantearán ejercicios y fichas en inglés para ser realizados por el alumno, tanto en clase como en casa. El alumno debe disponer de un diccionario.

Los puntos a y d deberán ser trabajados por el alumno principalmente en su casa, para el mejor funcionamiento de las clases. Hay que tener en cuenta que sin ese trabajo adicional por parte del alumno no se pueden cubrir suficientemente los contenidos de la asignatura.

Cuando el profesor hable en inglés lo hará con un lenguaje claro y sencillo, lentamente y repitiendo las expresiones o fórmulas utilizadas de manera que los alumnos las vayan asimilando. Este método concierne a los contenidos mínimos y básicos de la materia. Por otra parte, cuando se amplíen los conceptos o cuando la dificultad de las explicaciones lo requiera o bien cuando se necesite una mayor fluidez, se pasará a impartir la clase en castellano. Se pretende alternar los dos idiomas hasta conseguir hacerlo de forma natural y espontánea

Según se vaya avanzando en el conocimiento del inglés la metodología se irá ajustando, de manera que se podrá pasar a abordar la materia directamente en inglés (fundamentalmente 4º de E.S.O.), utilizando materiales elaborados según el temario español y sin renunciar a traducir o explicar todo lo necesario en español. Finalmente se podrá contemplar la posibilidad de utilizar libros ingleses..

Para conseguir que los alumnos adquieran una capacidad comunicativa en inglés se proponen, a partir de 2º trimestre de 3º y 4º de E.S.O los siguientes ejercicios semanales, en los que algunos alumnos harán:

- exposiciones orales breves (5-10 min)
- redacción escrita de párrafos breves

Finalmente, se intentará, en la medida de los recursos disponibles, aplicar las herramientas multimedia y audiovisuales para utilizar presentaciones, vídeos o juegos de interés para la materia.

Evaluación:

Las preguntas en los exámenes se formularán indistintamente en español y inglés, el porcentaje de preguntas en inglés por prueba irá aumentando con el curso (20% en 1º ESO, 30% en 3º ESO y 40% en 4º ESO). En inglés se utilizarán expresiones sencillas que los alumnos ya comprenden, del tipo *cite, complete, nombre, ordene, explique, describa, etc.* Si se introduce algún término nuevo se les dará la traducción en español entre paréntesis. Por su parte se les podrá pedir definiciones, descripciones, explicaciones cortas con frases sencillas, gramaticalmente adecuadas para su nivel de inglés y utilizadas en las clases, en las que manejen los términos específicos de las Ciencias naturales. Se les evaluará la correcta expresión

PROGRAMACIÓN DE BIOLOGÍA Y GEOLOGÍA 1º DE E.S.O.

I. CONTENIDOS COMUNES	ACTIVIDADES	MATERIALES	APOYO LINGÜÍSTICO * KEYWORDS
<p>* Utilizar fuentes de información variadas para extraer búsquedas con criterios propios.</p> <p>* Comprender y expresar mensajes científicos utilizando el lenguaje oral y escrito con propiedad.</p> <p>* Interpretar algunos fenómenos naturales cotidianos</p> <p>* Reconocer y valorar las aportaciones de la ciencia a la vida cotidiana.</p> <p>* Conocer, valorar y respetar el patrimonio natural.</p>	<p>* Buscar información utilizando Internet, resumirla y comunicarla coherentemente.</p> <p>* Elaborar informes sencillos sobre textos científicos o actividades prácticas.</p> <p>* Reconocer el método científico en los contenidos de estudio.</p> <p>* Experimentar virtualmente procesos naturales con TICs. Trabajo con simuladores on-line.</p> <p>* Visita al parque Nacional de Monfragüe (guía bilingüe).</p>	<p>* Libro de texto</p> <p>* Ordenador (navegador y paquete ofimático).</p> <p>* Cuaderno de trabajo, regla, lápices de color.</p> <p>* Proyector digital.</p> <p>* DVD, documentales y películas.</p> <p>* Biblioteca del Centro.</p>	<p>* Understand, learn</p> <p>* Life Sciences and Earth (SVT)</p> <p>* Be living / nonliving</p> <p>* Five Kingdoms: Monera, Protista, Plants, Animals, and Fungus.</p> <p>* Planet Earth.</p> <p>* Chemistry: atoms and molecules.</p> <p>* Experimentation assisted by computer.</p> <p>* Look for information on the Internet.</p>
II. EL PLANETA TIERRA (primer trimestre)	ACTIVIDADES	MATERIALES	APOYO LINGÜÍSTICO * KEYWORDS
<p>1.- Estrellas, planetas y satélites. Localización de nuestro planeta dentro del Sistema Solar.</p> <p>Movimientos de rotación y traslación.</p> <p>3.- La atmósfera: la parte gaseosa de la Tierra. Los fenómenos atmosféricos y el clima.</p> <p>4.- La hidrosfera: el ciclo del agua. El agua y los seres vivos. Las reservas de agua dulce y su problemática.</p> <p>5.- Estructura interna de la Tierra. La Litosfera. Rocas y minerales más comunes.</p>	<p>* Representación a escala del Sistema Solar. Construcción de un Planetario sencillo</p> <p>* Simulación sencilla de los movimientos terrestres.</p> <p>* Utilización de instrumentos meteorológicos de medida.</p> <p>* Lectura de mapas meteorológicos sencillos.</p> <p>* Cálculo del consumo diario de agua.</p> <p>* Visionado y explicación de documentales</p> <p>* Determinación de algunas propiedades de los minerales: dureza y densidad.</p>	<p>* Planisferio celeste, brújula y prismáticos.</p> <p>* Cartulinas, tijeras, metro y colores para realizar un modelo a escala de la Tierra.</p> <p>* Linterna, pelota tenis, de ping pong y aguja de punto para el planetario.</p> <p>* Colección de rocas y minerales.</p> <p>* Balanza, probetas, escala Mohs (moneda, navaja, cristal)</p>	<p>* Positions in the universe: Solar system.</p> <p>* Movement of translation and rotation.</p> <p>* Atmosphere and Hydrosphere.</p> <p>* Water Cycle. Forms of water on the Earth.</p> <p>* Water consumption in the world. Problematic.</p> <p>* Internal Structure of the Earth</p> <p>* Minerals and Rocks (examples)</p>
III. DIVERSIDAD DE LOS SERES VIVOS (segundo trimestre)	ACTIVIDADES	MATERIALES	APOYO LINGÜÍSTICO* KEYWORDS
<p>1.- La Tierra un planeta habitado. Funciones básicas de un ser vivo. Biodiversidad y clasificación. Concepto de especie.</p> <p>2.- Los seres vivos están formados por células. Organización unicelular y pluricelular. Los 5 Reinos.</p> <p>3.- Microorganismos beneficiosos y perjudiciales: Bacterias y protozoos.</p> <p>4.- El Reino de los Hongos. Las setas.</p> <p>5.- La plantas. Organización: raíz, tallo y hoja. La flor como aparato reproductor.</p> <p>6.- Los animales sin esqueleto (invertebrados) y con él (vertebrados). Grupos más importantes y ejemplos comunes en nuestros ecosistemas.</p>	<p>* Observación de las características morfológicas de distintos seres vivos a partir de fotografías.</p> <p>* Identificación de diferentes grupos de animales y plantas utilizando guías de campo.</p> <p>* Manejo elemental del microscopio y la lupa.</p> <p>* Realizar una presentación multimedia sobre las bacterias.</p> <p>* Elaborar cuadros de analogías y diferencias entre grupos de seres vivos.</p> <p>* Observación de flores frescas e identificación de las partes que la componen.</p> <p>* Construcción de un pequeño herbario de plantas comunes.</p> <p>* Visionado de documentales y fragmentos de películas, realización de resumen.</p> <p>* Campaña de reforestación y ajardinamiento del Centro.</p>	<p>* Fotografías de organismos unicelulares y pluricelulares, y de células animales y vegetales.</p> <p>* Lupa y microscopio. Pinzas y aguja enmangada.</p> <p>* Claves dicotómicas simples.</p> <p>* Guías de campo para identificar plantas, vertebrados, insectos, etc.</p> <p>* Colecciones de seres vivos naturalizados.</p> <p>* Colección de preparaciones microscópicas del Dpto.</p> <p>* Modelos tridimensionales de vertebrados e invertebrados.</p> <p>* DVD, documentales y películas.</p>	<p>* Biological characteristics of a living being: nutrition, reproduction, relationship.</p> <p>* The cell. Definition and types. Prokaryotic and eukaryotic.</p> <p>* Major cellular structures.</p> <p>* Characteristics of five kingdoms of life.</p> <p>* Micro-organisms/microbe: Bacteria, protozoa.</p> <p>* Observation with a magnifying glass or microscope.</p> <p>* Infectious Diseases.</p> <p>* Mushroom Kingdom</p> <p>* Vegetable Kingdom. The root, stem, leaf, flower.</p> <p>* Animal Kingdom. Invertebrates and Vertebrates</p>
IV. ECOSISTEMAS: RELIEVE (tercer trimestre)	ACTIVIDADES	MATERIALES	APOYO LINGÜÍSTICO* KEYWORDS
<p>La Biosfera. Los ecosistemas. Factores abióticos y bióticos. Cadenas y redes tróficas.</p> <p>1.- Energía interna del planeta. Volcanes y terremotos.</p> <p>2.- Relieve y placas de la Litosfera. Continentes y fondos marinos.</p> <p>2.- La energía externa. La atmósfera y su papel protector. El efecto invernadero y sus causas.</p> <p>3.- Reparto desigual de la radiación solar. Circulación del aire y clima.</p>	<p>Descripción de ecosistemas singulares cercanos.</p> <p>* Confección de un volcán en el laboratorio.</p> <p>* Observación de mapas de volcanes y terremotos y comparación con la situación de las placas litosféricas.</p> <p>* Realización de modelos sencillos de la relación orbital Tierra/Sol.</p> <p>* Diseñar una experiencia para valorar el efecto invernadero y el albedo.</p> <p>* Comprensión y análisis guiado de textos sobre problemas ambientales.</p>	<p>Imágenes de diferentes biomas y ecosistemas.</p> <p>* Botella de plástico, vinagre, bicarbonato sódico, pimentón, jabón líquido, agua.</p> <p>* Globo terráqueo, linterna, y todo lo necesario para diseñar un modelo de estacionalidad.</p> <p>* Recipientes transparentes, cartulina blanca y negra, termómetros.</p> <p>* Mapas del relieve del fondo oceánico y mapas sencillos de riesgo volcánico.</p> <p>* Vídeo, DVD, documentales, películas.</p>	<p>The characteristics of the environment (light, temperature, oxygen). Biodiversity.</p> <p>* Geology</p> <p>* Earthquakes, mountains and volcanic activity</p> <p>* Lithosphere. Plate tectonics. Dorsal and subduction.</p> <p>* Modeled landscape</p> <p>* Geomorphology: erosion, transport and deposition</p> <p>* Layers of the Atmosphere, ozone, ultraviolet filter. greenhouse effect, global warming.</p> <p>* Climate, weather, temperature, rainfall, sunshine, humidity, wind speed..</p>

PROGRAMACIÓN DE BIOLOGÍA Y GEOLOGÍA 3º DE E.S.O.

ORGANISATION AND ORDER OF THE CONTENT AND ASSESSABLE LEARNING STANDARDS

The content in the area of Biology and Geology is grouped into different blocks. Content, assessment criteria and learning standards are established for the first stage of Secondary Education.

Students will have to acquire basic knowledge and skills that allow them to improve their scientific education. Moreover, students must be recognise themselves as active agents and recognise that the development of the world around them will depend on their own knowledge and actions.

BLOCK	CONTENT	LEARNING STANDARS
1. ABILITIES, SKILLS AND STRATEGIES. SCIENTIFIC METHOD.	Scientific method. Basic characteristics. Biology and Geology experiments: obtaining and selecting information from samples taken from the natural environment.	1.1. Identifies the most frequently used terms in scientific vocabulary, expressing him/herself correctly orally and in writing. 2.1. Searches for, selects and interprets scientific information by using different sources. 2.2. Precisely conveys selected information using various support materials. 2.3. Uses scientific information to form personal opinions and discusses related problems. 3.1. Knows and respects the science laboratory safety rules, respecting and caring for the tools and materials used. 3.2. Plans experiments independently, using both optical recognition tools and basic laboratory equipment, defending the experiment process and describing and interpreting the results.
2. PEOPLE AND HEALTH. PROMOTING HEALTH. CONTENT	Levels of organisation of living matter. General organization of the human body: cells, tissues, organs and systems. Health and illness. Infectious and non-infectious illnesses. Hygiene and prevention. The immune system. Vaccines. Transplants and cell, blood and organ donation. Addictive substances: tobacco, alcohol and other drugs. Related problems. Nutrition, food and health. Nutrients, food and healthy eating habits. Eating disorders. The nutrition function. Anatomy and physiology of the digestive, respiratory, circulatory and excretory systems. Most frequent disorders, related diseases and how to prevent them, healthy lifestyle habits. The interaction function. The nervous system and the endocrine system. Coordination and the nervous system. Sense organs: structure and function, care and hygiene. The endocrine system: endocrine glands and their function. Their principal disorders. The locomotor system. Organisation and functional relationship between bones and muscles. Preventing injuries. Human reproduction. Anatomy and physiology of the human reproductive	1.1. Interprets the different organisational levels in human beings, with a mind to how they are connected. 1.2. Differentiates between the different types of cells, and describes the function of the most important organelles. 2.1. Recognises the major tissues that make up the human body and links them with their function. 3.1. Explains the implications of habits in good health and justifies his/her answers to encourage them individually and collectively. 4.1. Recognises the most common illnesses and infections and can link them to their causes. 5.1. Distinguishes and can explain the different mechanisms involved in the transmission of infectious diseases. 6.1. Knows and can describe healthy lifestyle habits by identifying them as a means of promoting their own health and that of others. 6.2. Suggests methods of preventing and avoiding the spread of the most common infectious illnesses. 7.1. Explains the process of immunity, valuing the role of vaccines as a method of preventing illnesses.

BLOCK	CONTENT	LEARNING STANDARS
	<p>system. Physical and psychological changes in adolescence. The menstrual cycle. Fertilisation, pregnancy and birth. Analysis of the different contraception methods. Assisted reproduction techniques. Sexually transmitted infections. Prevention. Sex and sexuality. Health and sexual hygiene.</p>	<p>8.1. Underlines the importance of cell, blood and organ donation for human beings and society.</p> <p>9.1. Detects health risks related to the consumption of toxic substances and stimulants such as tobacco, alcohol, drugs, etc.; contrasts their harmful effects and suggests methods of control and prevention.</p> <p>10.1. Identifies the consequences of risky behaviour with drugs, for the individual and for society.</p> <p>11.1. Distinguishes between nutrition and eating.</p> <p>11.2. Relates each nutrient to its function in the body and recognises healthy nutritional habits.</p> <p>12.1. Works towards healthy nutritional habits by developing balanced diets and using tables with different food groups, their key nutrients and their amount of calories.</p> <p>13.1. Values the importance of a balanced diet for a healthy life.</p> <p>14.1. Determines and identifies, by using graphs and diagrams, the different organs and systems involved in the nutrition function, and links them to their contribution in the nutrition process.</p> <p>15.1. Recognises the role of each system in the nutrition function.</p> <p>16.1. Distinguishes between the most common illnesses of organs and systems involved in nutrition and can link them to their causes.</p> <p>17.1. Knows and can explain the elements of the digestive, circulatory, respiratory and excretory systems and how they work.</p> <p>18.1. Specifies the function of each system involved in the interaction function.</p> <p>18.2. Describes the different stages of the interaction function by identifying the organ or structure responsible for each stage.</p> <p>18.3. Classifies the different types of sensory receptors and links them to the sense organs in which they can be found.</p> <p>19.1. Identifies some of the most common illnesses of the nervous system, linking them to their causes, risk factors and means of prevention.</p> <p>20.1. Lists the endocrine glands and associates them with the hormones they secrete and their function.</p> <p>22.1. Locates the most important bones and muscles of the human body in pictures of the locomotor system.</p> <p>23.1. Sets apart the different types of muscles, depending on the way they contract, and links them to the nervous system that controls them.</p> <p>24.1. Identifies the most common risk factors that can affect the locomotor system and links them to the injuries they produce.</p> <p>25.1. Uses pictures to identify the different organs of the male and female reproductive systems and can specify their functions.</p> <p>26.1. Describes the main stages of the menstrual cycle by indicating which glands and hormones are involved in regulating it.</p> <p>27.1. Distinguishes between the different methods of human contraception.</p> <p>27.2. Classifies the most important sexually transmitted infections and explains how to prevent them.</p> <p>28.1. Identifies the most frequent assisted</p>

BLOCK	CONTENT	LEARNING STANDARS
		reproduction techniques. 29.1. Acts, decides and responsibly defends their own sexuality and that of the people around them.
3. LANDFORMS AND THEIR EVOLUTION.	Factors involved in landform modelling. Landform modelling. Exogenous geological agents and the processes of weathering, erosion, transportation and sedimentation. Surface run-off waters and landform modelling. Groundwater, its circulation and exploitation. The geological action of the sea. The geological action of the wind. The geological action of glaciers. The different forms of erosion and the deposits they produce. The geological action of living organisms. Human beings as geological agents. The dynamics of the Earth. Origin and types of magmas. Seismic and volcanic activity. Distribution of volcanoes and earthquakes. Volcanic and seismic risk. The importance of prediction and prevention.	1.1. Identifies the influence of the climate and knows the characteristics of the rocks that condition and influence the different types of relief. 2.1. Links solar energy to external processes and can explain the role of gravity in these dynamics. 2.2. Distinguishes between the different modelling agents: weathering, erosion, transportation and sedimentation; recognises their effects on the Earth's relief. 3.1. Analyses the activity of erosion, transportation and sedimentation caused by surface water and recognises some of its effects on the Earth's relief. 4.1. Values the importance of groundwater and understands the risks of overexploiting it. 5.1. Links seawater movements to erosion, transportation and sedimentation on the coastline and identifies some of the landforms caused by coastal modelling. 6.1. Associates wind action with the environments in which this geological action is relevant. 7.1. Analyses the dynamics of glaciers and identifies their impact on the Earth's relief. 8.1. Looks at the surrounding landscape and identifies some of the factors that have conditioned its modelling. 9.1. Identifies the action of living organisms in the processes of weathering, erosion and sedimentation. 9.2. Assesses the importance of human activity in the transformation of the Earth's surface. 10.1. Distinguishes between an external geological process and an internal one, and identifies their impact on the Earth's relief. 11.1. Knows and describes how earthquakes are produced and their consequences. 11.2. Relates the types of volcanic eruptions to the magma they produce and links them to the dangers they pose. 12.1. Justifies the existence of areas where earthquakes are more frequent and of greater magnitude. 13.1. Recognises seismic risk and volcanic risk, where appropriate, and knows which defences to prepare against them.
4. ECOSYSTEMS.	The components of an ecosystem. Abiotic and biotic factors in ecosystems. Aquatic ecosystems. Terrestrial ecosystems. Factors that trigger the disruption of ecosystems. Actions that promote the conservation of the environment. The soil as an ecosystem.	1.1. Identifies the different components of an ecosystem. 2.1. Recognises and lists the factors that trigger disruption in an ecosystem. 3.1. Selects actions that prevent environmental destruction. 4.1. Recognises that soil is a result of the interaction between abiotic and biotic factors, and points out some of these interactions. 5.1. Recognises the fragility of soil, and places importance on the need to protect it.
5. RESEARCH PROJECT	Team research project.	1.1. Understands and applies scientific method skills. 2.1. Uses arguments to justify the hypotheses proposed. 3.1. Uses different sources of ICT-

BLOCK	CONTENT	LEARNING STANDARS
		based information to create and present research. 4.1. Respects, values and participates in individual and group work. 5.1. Designs small research projects on animals and/or plants, their surrounding ecosystems or on human food and nutrition, and presents them in class. 5.2. Clearly and consistently explains the findings of his/her research, both orally and in writing.

4. METHODOLOGICAL CRITERIA AND GENERAL TEACHING STRATEGIES TO USE IN THE AREA. UNITS

To work with competences in the classroom implies an important change in methodology; the teacher becomes a manager of knowledge for students and students gain a more prominent role.

In the area of Biology and Geology:

We must systematically practise the methods that make up the framework of the course. Of course, the final goal of the area is to acquire the essential knowledge included in the basic curriculum, as well as the strategies of the scientific method. Nevertheless, students must develop attitudes that lead to reflection and analysis of the great scientific advances of today, their advantages and the ethical implications that sometimes arise. We therefore need a certain degree of individual practice and reflective work on the basic methods of the course: reading comprehension, oral and written expression, public debate and audiovisual communication.

In some aspects of the area, especially in those involving the systematic use of processes based on the scientific method, collaborative group work provides a perfect tool to delve into and discuss this sort of content, in addition to enabling students to practise their basic social skills and enriching them on a personal level through diversity.

Furthermore, each student draws from a set of potentials that defines their predominant types of intelligence. By using the theory of multiple intelligences, we can enrich our activities to help students comprehend the proposed content and thus make progress on the learning objectives.

In the area of Biology and Geology, it is essential to tie content into real contexts and create possibilities where students can apply the content they have learnt. Competence-based tasks facilitate this aspect, and preparing projects where students apply content could serve as a nice complement.

UNIT	CONTENT	LEARNING OBJETIVES
Unit 1 THE ORGANISATION OF THE HUMAN BODY	<ul style="list-style-type: none"> - The levels of organisation. - Organic and inorganic biomolecules. - Human cells. - Human tissues. - Human organs and systems. - Optical and electron microscopes. 	<ul style="list-style-type: none"> - To describe the different levels of organisation for living things and the characteristics of both organic and inorganic biomolecules. <ul style="list-style-type: none"> - To know the characteristics of human cells. - To explain the functions of the membrane, the cytoplasm, the nucleus and the cell organelles. - To define the concepts of cell and tissue differentiation and know the main human tissues. - To know the systems in the human body.

UNIT	CONTENT	LEARNING OBJETIVES
		<ul style="list-style-type: none"> - To classify the systems in the human body according to their function. - To know the different parts of the optical and the electron microscope and know how to use an optical microscope correctly. - To use different ICT methods in order to research and broaden knowledge on the characteristics of living things. - To acquire specific vocabulary related to unit contents in order to express knowledge both orally and in writing.
<p>Unit 2 DIET AND NUTRITION</p>	<ul style="list-style-type: none"> - Nutrients: types of nutrients. - Food: types of food and the functions they perform. - The food wheel and diet: how to create a balanced diet. - Types of diets. - Problems caused by malnutrition. 	<ul style="list-style-type: none"> - To know what a nutrient is, understand its importance for the organism and recognise the main types of nutrients. - To classify foods according to their nutritional value and know what function each one performs. - To know the different food groups that form part of the food wheel and their nutritional characteristics. - To understand the concept of diet and the characteristics a diet must fulfil in order to be balanced. - To describe the most common illnesses caused by malnutrition, know what causes them and how to prevent them. - To use different ICT tools to research and broaden knowledge about diet and the changes that may occur as a result of a poor diet. - To acquire the specific vocabulary used in this unit to express knowledge both orally and in writing.
<p>Unit 3 FOOD SAFETY AND HEALTH</p>	<ul style="list-style-type: none"> - Food contamination. Food-borne illnesses. - Food safety. - Preserving foods. Food additives. 	<ul style="list-style-type: none"> - To be familiar with the main types of food contaminants and describe the main examples of food-borne illnesses, their causes and how to prevent them. - To know the different stages of the food supply chain and the food safety measures that must be taken throughout these stages to prevent foods from being altered. To also be familiar with the measures consumers must take when buying, storing and preparing food. - To know the most important methods of food preservation and the processes they are based on. - To use different ICT methods to research and broaden knowledge on food preservation and food safety. - To acquire specific vocabulary related to unit contents in order to express knowledge both orally and in writing.
<p>4 Unit 4 NUTRITION SYSTEMS I: THE DIGESTIVE AND RESPIRATORY SYSTEMS</p>	<ul style="list-style-type: none"> - Nutrition: an exchange of substances. - The digestive system. - Digestion. - The respiratory system. - How the respiratory system works. 	<ul style="list-style-type: none"> - To describe the anatomy of the digestive system and differentiate the digestive tract from the accessory glands. - To understand how mechanical and chemical digestion takes place, and the process of nutrient absorption throughout the intestine. - To identify the respiratory tract and the anatomy of the lungs. - To describe how the respiratory function takes place. - To complete the practical 'Science workshop' activities in order to check the role played by bile when digesting fats. - To use different ICT methods to research and broaden knowledge of the digestive and respiratory system, as well as some illnesses

UNIT	CONTENT	LEARNING OBJETIVES
		<p>related to these systems.</p> <ul style="list-style-type: none"> - To acquire specific vocabulary related to the unit contents, in order to express knowledge both orally and in writing.
<p>Unit 5 NUTRITION SYSTEMS II</p>	<ul style="list-style-type: none"> - The circulatory system. - Blood flow. - The lymphatic system. - The excretory system. - Other organs involved in excretion. - Health and the nutrition function. 	<ul style="list-style-type: none"> - To describe the circulatory system, know the anatomy of the heart and explain how blood flow works. - To understand the lymphatic system and its functions. - To explain the anatomy of the excretory system and its functions. - To study other organs involved in excretion. - To describe the relationship between health and the nutrition functions, knowing about the most common illnesses that affect them and adopting healthy habits. - To correctly use a microscope. - To use different ICT methods to research and broaden knowledge on the characteristics of living beings. - To acquire specific vocabulary related to the unit contents, in order to express knowledge both orally and in writing.
<p>Unit 6 THE INTERACTION FUNCTION</p>	<ul style="list-style-type: none"> - The stages of the interaction function. - Receptors: sense organs. - Nervous coordination. - Endocrine coordination. - The locomotor system. - Diseases related to the interaction function. 	<ul style="list-style-type: none"> - To know the anatomy and functioning of systems present in the interaction function. <ul style="list-style-type: none"> - To know the parts of the sense organs and of a neuron. - To recognise the elements involved in a reflex action and a voluntary action. - To create diagrams about hormonal regulation. - To know the main bones and muscles of the skeletal system and muscular system. - To calculate blood alcohol concentration and the implications of alcohol consumption. - To use different ICT methods to research and broaden knowledge on the characteristics of living beings. - To acquire specific vocabulary related to the unit contents, in order to express knowledge both orally and in writing.
<p>Unit 7 HUMAN REPRODUCTION.</p>	<ul style="list-style-type: none"> - Sexuality and human reproduction. - The male reproductive system. - The female reproductive system. - The ovarian and uterine cycles. - The formation of a new individual. - Sterility and assisted reproduction. - Contraception. - Reproduction and health. 	<ul style="list-style-type: none"> - To understand the meaning of human reproduction and sexuality. - To know the anatomy of the male and female reproductive systems. - To understand the menstrual cycle. - To know about the different stages in the formation of a new individual. - To be aware of the problems caused by infertility and sexually transmitted infections. - To use different ICT methods to research and broaden knowledge on human reproduction. - To acquire specific vocabulary related to unit contents in order to express knowledge both orally and in writing.
<p>8. Unit 8 HEALTH AND ILLNESS</p>	<ul style="list-style-type: none"> - Health and illness. - How the human body defends itself. - Helping our bodies to fight illness. - Transplants and organ donation. 	<ul style="list-style-type: none"> - To understand the concepts related to health and illness. - To know about how our bodies defends themselves against pathogens. - To recognise the importance of medicine in treating and combatting illnesses. - To assess the importance of a healthy lifestyle as a means of preventing illnesses. - To recognise the importance of transplants, value the social relevance of donations, and know the specific conditions in order to be an organ donor. - To use different ICT methods to research

UNIT	CONTENT	LEARNING OBJETIVES
		and broaden knowledge on health and illness. <ul style="list-style-type: none"> - To acquire specific vocabulary related to the unit contents, in order to express knowledge both orally and in writing.
Unit 9 ECOSYSTEMS	<ul style="list-style-type: none"> - The components of an ecosystem: the biotope, the biocoenosis, and the interactions. - The influence of abiotic factors in the biocoenosis: adaptations. - Intraspecific relationships and interspecific relationships. - Trophic levels, food chains and food webs. - Aquatic ecosystems. - Terrestrial ecosystems: the biomes. 	<ul style="list-style-type: none"> - To know the components of the ecosystem: the biotope, the biocoenosis and the interactions presents between them. <ul style="list-style-type: none"> - To know the types of adaptations and describe some adaptations of the living beings to water, light and temperature. - To know the main intraspecific and interspecific relationships. - To explain the concept of trophic level and construct simple food chains and food webs. - To classify the aquatic organisms. - To describe marine and freshwater aquatic ecosystems. - To know the climatic zones of the Earth and describe the characteristics of the main biomes. - To use different ICT methods to research and broaden knowledge of the characteristics of living beings. - To acquire specific vocabulary related to unit contents in order to express knowledge both orally and in writing.
Unit 10 BALANCE IN ECOSYSTEMS	<ul style="list-style-type: none"> - Balance in ecosystems. - The services that ecosystems offer us. - Environmental impacts: loss of balance in ecosystems. - Protection of ecosystems. Maintaining the balance. 	<ul style="list-style-type: none"> - To know the characteristics of balanced ecosystems. - To know the ability of ecosystem to self-regulate and describe a self-regulating mechanism. <ul style="list-style-type: none"> - To know and classify the services that human beings obtain from ecosystems. - To explain the concept of environmental impact and know the main environmental impacts. - To describe measures for reducing environmental impacts. - To explain the concept of sustainable development and propose measures to achieve it. - To know the different parts of optical microscopes and be able to use this kind of microscope correctly. <ul style="list-style-type: none"> - To use different ICT methods to research and broaden knowledge on the characteristics of living beings. - To acquire specific vocabulary related to unit contents in order to express knowledge both orally and in writing.
Unit 11 THE DYNAMICS OF THE EARTH	<ul style="list-style-type: none"> - They type of energy responsible for the dynamics of the Earth. - The dynamics of lithospheric plates. - Different types of rock formation. - Earthquakes and seismic risk. - Volcanoes and volcanic risk. - Dynamics of the Earth and relief. 	<ul style="list-style-type: none"> - To identify the different types of energy that act on the Earth and recognise the effects each one produces. <ul style="list-style-type: none"> - To know why the plates change and know the different types of plate boundaries. - To know the different types of rocks in the geosphere and explain how each one is formed. - To know the causes of earthquakes and the seismic risk of an area. - To know the different parts of a volcano, the materials that come out of a volcano during eruptions and the volcanic risk of an area. - To know the processes of the dynamics of the Earth that renew its landforms. - To use different ICT methods to research and broaden knowledge on the dynamics of the Earth. - To acquire specific vocabulary related to

UNIT	CONTENT	LEARNING OBJETIVES
		the unit contents, in order to express knowledge both orally and in writing.
Unit 12 LANDFORM MODELLING	<ul style="list-style-type: none"> - Landform modelling and exogenous processes. - Weathering. - The geological action of water currents. - The geological action of groundwater. - The geological action of glaciers. - The geological action of the wind. - The geological action of the sea. - The geological action of living organisms. 	<ul style="list-style-type: none"> - To define landform modelling and the exogenous processes that shape relief. - To define weathering and explain the different types of weathering and soil formation. - To understand the geological action of 'wild waters' and torrents. - To differentiate between the sections of a river and describe river modelling. - To know about the origin of groundwater and understand karst modelling. - To understand the geological action of glaciers. - To identify the modelling produced by wind action. - To relate the main movements of seawater to the origin of coastal modelling. - To know about the geological action caused by living organisms. - To use laboratory techniques. - To use different ICT methods to research and broaden knowledge on landform modelling by different exogenous geological agents. - To acquire the specific vocabulary related to unit contents in order to express knowledge both orally and in writing.

PROGRAMACIÓN DE BIOLOGÍA Y GEOLOGÍA 4º DE E.S.O.

1. INTRODUCTION

This document refers to the **fourth-year ESO** syllabus for *Natural Sciences (Biology and Geology)*.

One of the aims of school education is to enable students to communicate —to understand and express themselves orally and in writing— in one or more foreign languages. To help further this aim, the same **Royal Decree** gives local education authorities the power to authorise schools to teach some curriculum subjects in a foreign language, as long as the basic curriculum requirements are met.

As a result, an increasing number of primary and secondary schools are offering a range of curriculum subjects through the medium of a foreign language, especially English. The aim of this so-called 'bilingual' education is to develop students' linguistic competence in all of the four skills of listening, speaking, reading and writing through content and language integrated learning (CLIL). The Oxford CLIL series has been conceived and developed specifically for the needs of secondary students in bilingual sections and schools. It covers the curriculum requirements in the subject area providing students with the necessary subject knowledge, whilst at the same time developing their linguistic skills in both their mother tongue and English.

The course objectives, content, methodology and assessment criteria are now closely linked to these competences, which guide the teaching and learning process.

In each of the ten teaching units for this subject and school year, concepts, procedures and attitudes are all interlinked, interrelated with the basic competences and geared towards the teaching and learning process. Each performs a different, yet complementary, role in the students' learning process. This is also clearly reflected in the assessment criteria and the basic competences and subcompetences, which each apply to different content types and require different approaches in the classroom.

Students should always be encouraged to participate and learn to work independently as well as in a team, in such a way that they themselves *construct* their own knowledge, another feature of competence-based education. This is even more essential in a bilingual context. Teaching students the values of a democratic, free, tolerant and multicultural society continues to be one of the priorities of the education system, as reflected in the objectives of this stage of education and in those of this subject in particular. In the different units, students will develop the skills directly linked to all the basic competences and, in addition, competence in the foreign language.

Each teaching unit starts with an opening section which presents the unit content through a series of questions. These can help to remind students of the knowledge they acquired in this same subject during the previous year. The subsequent unit content is presented in a clear, organised and concise way. The approach to each topic, the vocabulary, the complexity of the content have all been adapted to the cognitive abilities of the students. The language level has been carefully graded for non-native speakers. The content is presented and explained using explanatory boxes and visual support (photographs, illustrations, etc.), which is a key learning tool, helping students understand new concepts and language more easily. There is also a summary chart of the unit content at the end of each unit.

As far as possible, classroom learning should be adapted to students' own day-to-day reality and interests. In other words, it should be *meaningful*. As such, whenever possible, the content is presented through real, familiar examples, so that the students become both actively and receptively involved in their own learning.

However, the pace at which each student learns varies, depending on his or her cognitive development and social and family environment. As such, attention to diversity amongst students and in their learning environment is a fundamental part of teaching. Many activities (in both the textbook and the teacher's resources) are designed to meet the needs of an invariably diverse classroom.

Section 5 of this document (Programmes of study) sets out the content of each unit, dividing them into the categories of concepts, procedures and attitudes. Although the content is not classified as such in the legislation, they figure in this form in the school curriculum and can be used to support and document different teaching and learning strategies. We think that it is important that students continue to learn concepts, procedures (skills) and attitudes, so that they can use all of these to acquire the basic competences.

The course content is divided into 10 teaching units. Each is presented here, divided into a series of sections to demonstrate how the teaching and learning process will take place:

- Unit objectives.
- Unit contents (concepts, procedures and attitudes).
- Assessment criteria.
- Basic competences/subcompetences linked to the assessment criteria and learning activities.

The textbook used is *Biología and Geología 4 ESO* (Santillana).

2. METHODOLOGY

At the heart of the methodology employed in the Oxford CLIL series lies a dual aim: to cover all of the subject requirements prescribed by the curriculum, while also catering to the needs of students studying in a foreign language. This is achieved using a CLIL-based approach, the core principles of which are as follows:

- The subject comes first.

- Long, dense texts and complex sentences are avoided.
- Presentation of content is supported by visual aids: photos, flow charts, diagrams, tables, and labelled drawings, for example.
- Learning is guided and structured.
- Comprehension tasks are used more frequently than in a native language context to reinforce assimilation and processing of content and provide more language practice.
- Learning is active whenever possible.
- Greater emphasis is placed on the process of learning.
- The four skills are crucial for presenting and learning new information.

Despite the fact that the subject is being taught through the medium of a foreign language, many of the methodological considerations are the same as for mother tongue instruction. However, teachers should be aware that the pace of learning may be somewhat slower, especially in the initial stages and more time will be spent on checking understanding and reinforcing linguistic elements. Teachers should address students in English, and students should be encouraged and helped to use English as much as possible.

The development of scientific knowledge in the ESO 4 Natural Sciences curriculum focuses exclusively on biology and geology, as it did in the previous year. These two subjects, along with physics and chemistry, share a common and set method of representing and analysing reality. In ESO 4 knowledge and interpretations become more specialised, in-depth and complex in accordance with the students' intellectual maturity.

This specialisation does not go against the principle of interdisciplinary study: scientific knowledge, in general, and a knowledge of natural sciences, in particular, cannot be studied using a piecemeal approach. Students must be made aware that there are certain research procedures that are shared by all fields of science, and it is therefore essential that the curriculum should include, for example, competence in knowledge and interaction with the physical world. We should also not forget that this year the subject is now optional for students and those who choose it will also normally choose Physics and Chemistry and go on to study the Science and Technology Bachillerato. Therefore, the interrelation between both subjects – because of all the aspects they have in common – is essential.

During this year, the students' final year of compulsory education, one of the key aims continues to be basic scientific literacy skills. By this we mean familiarising students with basic scientific ideas and with a scientific method of analysing the world around them. Scientific knowledge and its associated culture are essential for anyone living in a highly technical society such as ours. The goal is not to train biologists or geologists but to provide students with instrumental knowledge that enables them to understand many of the problems affecting the natural world and the environment. This will in turn allow them to understand their own role in the sustainable development of the Earth.

These aims can only be achieved if the course content (concepts, facts, theories, laws, etc.) is taught based on the students' prior knowledge and their own environment. If we also take into account that, throughout the course of history, scientific advances have become one of the paradigms of social progress – scientific knowledge advances at a rate impossible to predict and its application changes our lifestyles – we can see that these advances are fundamentally important to students' education, an education which should follow a rational, empirical approach to knowledge. It is also important to emphasise what a scientific approach can bring to students: strategies and skills for learning any subject (systematisation of knowledge, formulating hypotheses, checking

results, research, working in groups, etc.), which are closely related to some of the basic competences. In addition, and this can never be emphasised enough, scientific knowledge must be combined with humanistic knowledge, as both are an inseparable part of the basic culture of a 21st-century citizen.

As such, the study of *Biology and Geology* throughout this year will:

- take into account that knowledge is not always conceptual in character: it also includes procedures and attitudes. Throughout the course, these three different types of knowledge are presented in such a way that they encourage students to interpret their environment and to achieve the basic competences in this subject, which means employing the scientific method.
- achieve meaningful, relevant and functional learning, so that students can apply the course content/knowledge acquired to their own understanding of their immediate natural surroundings (learning competences) and to the study of other subjects (instrumental learning).
- promote constructive learning, so that the course content leads to learning.
- cover basic topics appropriate to students' individual cognitive capabilities.
- encourage students to work individually and as part of a team.

In order to implement the three-pronged but integrated approach of concepts, procedures and attitudes, and to help students acquire certain basic competences, the proposed methodology must take into account the fact that new science is constantly being discovered and received wisdom reviewed. Our scientific knowledge of the world is in a constant state of flux. The course must both equip students with information and highlight the active role that they should themselves take in the learning process (learning to learn). Various strategies can be used to do this:

- Teaching some of the most commonly used methods in science and scientific research, asking students to apply the methods covered in each unit.
- Creating appealing, motivating scenarios and contexts which help students to overcome any resistance they may have to learning science.
- Providing practical activities that help students to apply scientific methods and that motivate them to study.
- Using different types of visual aids which make it easier for students to understand and learn new concepts quickly, and help them to achieve the course objectives and the basic competences.
- Take advantage of the learning possibilities provided by the regular use of information and communication technologies (DVD-ROMs, the Internet, etc.), which will help students keep up to date with the latest scientific developments and offer more motivating ways of learning.

Earlier, we discussed how important it is for students to take an active role in the gradual acquisition of their own knowledge. As such, any methodological resource (and textbooks are still one of the best) should be used in such a way that students continue to participate in the day-to-day learning process. However, in today's context, where the use of information and communication technologies (the Internet, digital resources, etc.) is so widespread, and digital classrooms (with interactive whiteboards, video projectors, etc.) are becoming more common due to various national and regional programmes, information and communication technologies are a key part of the teaching and learning process. Not only can they be used to obtain information – not forgetting the huge possibilities offered by the simulation of scientific and natural phenomena –, they also

help the development of other basic competences included in the curriculum (data processing and digital competence, learning to learn, etc.) and have proven to be an effective resource, facilitating learning and thus improving academic results.

To summarise, the methodological principles on which the materials are based and which teachers should bear in mind in the classroom learning process are:

- to approach content in a manner that helps students learn in a meaningful, significant way.
- to introduce concepts in a clear, simple and reasoned way, using language adapted to the students' level and helping to improve their spoken and written expression both in the foreign language and their mother tongue (linguistic competence).
- to use learning strategies that encourage students to analyse and understand facts about science and nature.

Each unit of the *Student's Book* has the same structure, and each section aims to meet the various methodological requirements outlined above:

- An **opening page**, with a series of initial questions and an illustration to introduce the content, teach some key vocabulary and raise interest in the topic.

- **Explanatory pages:**

- Explanatory texts are presented in concise, straightforward language, which makes it easy for students to identify and grasp core concepts. Texts are accompanied by photos and illustrations which support the content and aid understanding.
- Simple experiments are demonstrated visually on the page to make it easier for students to understand concepts and procedures.
- Additional information, in the form of boxes, drawings, data tables, photographs, etc.

- **Key words and core language:**

- Key words on each page have been selected carefully and are highlighted in blue in the text, with simple definitions provided in a Key word box in the margin. As well as helping students to understand the material presented, these boxes also provide students with a useful tool for revising the main vocabulary of the unit. All the Key words and their definitions are recorded so that students can listen and repeat the words from a correct model, which will aid their pronunciation and serve as a useful learning aid for auditory learners.
- As well as understanding the subject-specific language, students learning through the medium of English also have to acquire and use the necessary core language to enable them to express and discuss the concepts in an appropriate, academic style. Through careful choice of language in the texts and the highlighting of this language in selected activities, students gradually build up their proficiency.

- **Activity pages:**

- Content pages are interspersed with pages of activities which reinforce the concepts presented in the texts whilst, at the same time, practising the language necessary to express and understand these concepts in English.

Activities are divided into three main types:

1. Activities which focus primarily on comprehension of the concepts presented

2. Activities which combine work on the concepts with practice of a specific language area
 3. Activities which highlight a specific area of language difficulty in the unit e.g. word stress, false friends, easily confused words, spelling, irregular verbs, etc.
- In addition, listening activities are included which help to reinforce vocabulary and pronunciation and develop oral comprehension.
- A single page of **Revision activities** at the end of each unit, enables students to apply the knowledge they have acquired and teachers to see if any points need to be reinforced. The final section of these *Revision activities* is called **Talking points** and consists of oral activities in small groups or pairs, in which students describe and explain a process or concept, express and exchange opinions, have a debate, do a presentation based on their research etc. These activities are designed to develop oral fluency and communication in the foreign language.
 - A page at the end of each unit on the **Development of basic competences**, containing a series of activities which relate the basic competences that students must acquire throughout the course to everyday situations.
 - A **summary** table of the unit content for students to complete.

3. BASIC COMPETENCES

The Constitutional Law on Education has a new definition of curriculum, which includes not only the traditional components (objectives, contents, teaching methods and assessment criteria), but also an important new component: *basic competences*. These competences are now one of the linchpins of the curriculum as a whole (it is no coincidence that they are set out in the curriculum before even the objectives). They therefore guide the entire teaching and learning process, especially when in the second year of compulsory secondary education, students completed a diagnostic test to demonstrate that they had acquired certain competences. Regardless of whether or not the mark for that assessment counts towards the students' grades, the results can be used as a guide so that schools can make decisions about students' learning. This gives us some idea of how the teaching process is affected by this new element, i.e. it becomes much more practical, providing students with transferable skills, not ones that are only applicable in the school context. And of course, students will only achieve the ESO certification this year if they have acquired the relevant basic competences, so these competences now form part of the assessment framework too.

There are many definitions of the concept of basic competences (which can be found in the PISA reports), but they all stress the same thing: instead of an educational model that focuses on the acquisition of mostly theoretical, often unconnected, aspects of knowledge, it is better to acquire competences, leading to the acquisition of essential, practical and integrated knowledge, which students must then demonstrate that they have acquired (i.e. it goes beyond functional training). In short, a competence is the capacity to integrate knowledge, skills and attitudes to resolve problems and situations in various contexts, and students must prove that they have that capacity by putting it into practice. It has been defined very succinctly as the putting into practice of acquired knowledge, or *knowledge in action*. In other words, it is the *mobilisation* of knowledge and skills in a specific situation and the *activation* of resources or knowledge acquired (even if students think that they have forgotten what they have learnt).

There is one aspect worth highlighting, which we could refer to as the *combined nature* of competences: through what they *know*, students must be able to demonstrate what they *know how to apply*, but also what they *know how to be*. Each competence is made

up of the combination of the different types of content learnt in the classroom (concepts, procedures and attitudes), each one forming one of the multifaceted skills that provide students with a well-rounded education. We recognise that schools are not just providing students with technical and scientific knowledge, but also teaching them about citizenship, so they must be able to demonstrate a series of civic and intellectual attitudes that reflect respect for others, a sense of responsibility, teamwork, and so on.

There is another important aspect, and one which is often not stressed enough: if students acquire competences, they are then able to deal with the way that knowledge in any field is constantly being renewed and updated. Students' academic training within the school environment takes place over the course of a limited number of years, but their need for personal and/or professional development is lifelong. As such, providing students with the necessary competence in, for example, the use of information and communication technologies means that they will be able to use these tools to gather the information required at any given moment, assessing the quality of that information they find. Given that it is often impossible to cover all of the curriculum content in great detail over the course of the school year, students need to develop the competence of *learning to learn*.

In the Spanish education system, students must achieve the following basic competences before they finish compulsory education so that they are prepared for the challenges that they will face in their personal and professional lives:

- Linguistic competence.
- Mathematical competence.
- Competence in knowledge and interaction with the physical world.
- Data processing and digital competence.
- Social competence and citizenship.
- Cultural and artistic competence.
- Learning to learn.
- Autonomy and personal initiative.

But what do these competences really mean? Below is a summary of the key ways in which each competence influences students' intellectual and personal development, with reference to the most important parts of the school curriculum:

- **LINGUISTIC COMPETENCE**
This competence refers to the use of language (in this case, especially the foreign language) as a tool for oral and written communication, learning, and self-regulation of thought, emotions and behaviour. It also helps students to create a positive personal image and develop constructive relationships with others and with the environment. So, learning to communicate means forming links with other people and getting to know other cultures, which we are then more likely to understand and respect. In short, this competence is absolutely essential when it comes to resolving conflicts and learning to live alongside others. Acquiring this competence means acquiring a fluency in oral and written language in various contexts and being able to use at least one foreign language.
- **MATHEMATICAL COMPETENCE**
First and foremost, this competence consists of the ability to use numbers and basic numerical operations, symbols and forms of mathematical reasoning and expression, in order to produce and interpret data, to find out more about quantitative and spatial aspects of reality and to resolve problems relating to day-to-day life and work. So, acquiring mathematical competence means being able to use skills and approaches that allow one to reason mathematically, understand mathematical argumentation, express oneself and communicate in

mathematical language, and use mathematical knowledge in combination with other types of knowledge.

- **COMPETENCE IN KNOWLEDGE AND INTERACTION WITH THE PHYSICAL WORLD**

This competence refers to the skill of interacting with the natural and man-made elements of the physical world, helping students to understand events, predict consequences and act in a way that contributes to improving and preserving their own living conditions and those of other people and living things. It basically refers to acquiring a scientific/rational way of thinking which enables one to interpret information and make decisions independently, using one's own initiative, as well as applying ethical values in decision-making in personal and social contexts.

- **DATA PROCESSING AND DIGITAL COMPETENCE**

This is the ability to look for, obtain, process and communicate information and transform it into knowledge. It includes aspects ranging from accessing and selecting information, to using it and conveying it in different formats, including the use of information and communication technologies as an essential tool for finding information and communicating. Gaining skill in this area involves using technological resources to resolve problems efficiently and having a critical, reflective attitude when it comes to assessing the information available.

- **SOCIAL COMPETENCE AND CITIZENSHIP**

Once students have acquired this competence, they will be able to live in society, understand the social reality of the world in which they live, and exercise civic responsibility in a democratic society which is becoming ever more multicultural. It concerns forms of individual behaviour which allow people to live together in one society, get along with others, cooperate, get involved and tackle conflicts. This means that acquiring this competence translates into being able to empathise and understand other people's position, accept differences, be tolerant and accept the values, beliefs, cultures and personal and collective histories of others. It means understanding the social reality in which one lives, tackling conflicts by applying ethical values, and exercising civic rights and duties responsibly and in solidarity with others.

- **CULTURAL AND ARTISTIC COMPETENCE**

This competence consists of knowing, appreciating, understanding and critically assessing different forms of cultural and artistic expression, using them as a source of personal enjoyment and enrichment and viewing them as part of people's cultural heritage. It involves appreciating and enjoying art and other forms of cultural expression, being open to the variety of different methods of artistic expression, conserving the shared cultural heritage and fostering students' own creative capacities.

- **LEARNING TO LEARN**

This competence is made up of two key elements: the first refers to students' ability to start learning, and the second to their ability to continue learning independently, and seek rational answers. It also involves allowing for various possible answers to the same problem and motivating students to look for those answers using different methodological approaches. It involves managing one's own abilities in terms of striving for efficiency and drawing on different intellectual resources and techniques.

- **AUTONOMY AND PERSONAL INITIATIVE**

This competence refers to students being able to use their own judgement and have the initiative required to make and pursue individual choices and take responsibility for them, both in their personal lives and in a social and professional context. By acquiring this competence, students can become more creative, innovative, responsible and critical in their approach to individual or group projects.

Competences do not just involve knowledge and skills acquired in a single subject only or which are used exclusively for that subject. Everything that students learn across their different subjects (and not just at school) and other educational activities (extra-curricular activities) combines to form a sort of cultural baggage, a collection of information that they must be able to use throughout their lives, at the right time and in different situations. So, any one of these competences can be achieved perhaps not in all parts of the curriculum but certainly in most of them, and for the same reason all of these competences can be used and applied in any topic or subject, regardless of where they have been acquired (cross-curricular competences). Competence should guarantee that a student has achieved certain learning objectives, but it should also enable students to achieve other objectives, both at school and afterwards, guaranteeing continuous learning.

The different elements of the curriculum are obviously interlinked, and we need to be aware of this so that the curricular materials used in the teaching and learning process are used correctly. When the unit objectives (expressed as capacities or skills) are set out in a teaching programme, they influence the choice of certain contents over others. Assessment criteria also need to be included to enable evaluation of whether students meet these objectives (or not). The assessment criteria can therefore be divided into two categories, interpreted in different ways. The first category includes criteria related to the student's learning. In other words, some criteria will be more or less expressly linked to concepts, others to procedures (skills) and others to attitudes. Each of these content types must be assessed because they have been studied in class. They are assessed at different points through continuous assessment. The second category includes assessment criteria that are more directly linked to the basic competences.

If we think of the basic competences as the real and practical application of knowledge, skills and attitudes, the best way to check or assess whether or not the student has acquired those competences is to reproduce the most realistic situations possible in which they should be applied. In these situations, students usually draw on the tapestry of knowledge (made up of all sorts of contents) they have accumulated over the course of their schooling, but respond, above all, to practical situations. So when we assess competences we are assessing procedures and attitudes, first and foremost, but concepts are an essential basis for them. That is why the competences are linked to assessment criteria relating mostly to procedures and attitudes.

So how can each of the basic competences be acquired? The following section describes the most important aspects of each basic competence for this subject. These descriptions may need to be adapted to the practical needs of real-life teaching.

■ **COMPETENCE IN KNOWLEDGE AND INTERACTION WITH THE PHYSICAL WORLD**

This is the most important competence in this subject. In order to acquire this competence, students must gain a sound knowledge of concepts and the inter-relationships between them, observe the physical world and natural phenomena, acquire a knowledge of human impact, multi-causal analysis, etc. However, like other competences, this one requires students to become familiar with the

scientific method as a work method, so that they can act rationally and reflectively in many aspects of their academic, personal and professional lives.

- **MATHEMATICAL COMPETENCE**

By using mathematical language to quantify natural phenomena, analyse cause and effect, convey data, etc., in short, to understand the quantitative aspects of natural phenomena and the use of mathematical tools, students become aware that mathematical knowledge is of real use in many aspects of their own lives.

- **DATA PROCESSING AND DIGITAL COMPETENCE**

To understand physical and natural phenomena, it is essential that students know how to work with data (obtaining, selecting, handling, analysing and presenting it) from various sources (written, audiovisual, etc.), not all of which are as reliable and objective as others. So information obtained from traditional written sources as well as new technologies must be analysed according to critical, scientific criteria.

- **SOCIAL COMPETENCE AND CITIZENSHIP**

This subject develops this competence in two key ways: by preparing students to participate in decision-making as part of society, for which scientific literacy is required; and by providing them with a knowledge of how, historically, scientific advances have played a role in the evolution and progress of society (and of people), but also that it has had negative repercussions for humanity, and that the resulting risks to people and the environment must be controlled (sustainable development).

- **LINGUISTIC COMPETENCE**

This competence is worked on in two key ways: the use of the foreign language as a communicative tool in the education process (subject-specific vocabulary that students should incorporate into their day-to-day vocabulary and general academic language); and the importance of the way that information is expressed in all the curriculum contents.

- **LEARNING TO LEARN**

This competence gives students the skills and strategies that they need to help them learn throughout their lives, building up and conveying scientific knowledge. It also allows them to integrate that new knowledge into their existing knowledge and analyse it, drawing on the techniques that make up the scientific method.

- **AUTONOMY AND PERSONAL INITIATIVE**

This competence equips students to think critically and scientifically, enabling them to dismiss non-scientific dogmas and prejudice. To do this, they must do science: in other words, tackle problems, analysing them, suggesting solutions, assessing consequences, etc.

We have now looked at the basic competences established by the Spanish education system. These competences are inevitably very generic. If we want to use them as a point of reference for teaching and to demonstrate the real competence achieved by students (assessment), we need to make them even more specific, breaking them down into *subcompetences* and linking them to the other elements of the curriculum. These subcompetences are statements which have been written after a comprehensive analysis of the curriculum in order to draw up functional learning objectives expressed in such a way that they can be identified by any teacher.

4. ACTIVITIES, ATTENTION TO DIVERSITY, ASSESSMENT, AND ASSESSMENT OF BASIC COMPETENCES

ACTIVITIES

The *Student's Book* provides various learning activities for each section of the unit. There are also Revision Activities at the end of each unit. The *Teacher's Book* contains supplementary materials on a CD-ROM. These activities have different educational aims, and are linked to both the course content and the basic competences (in the Assessments of basic competences).

Teachers can carry out an initial assessment at the start of the school year to assess the students' starting point and a final assessment at the end of term to see whether or not the general course objectives have been achieved. There is also a series of tests on the *Teacher's Book* CD-ROM.

In addition to the learning activities and the activities for checking knowledge, there is another essential activity type in this subject: procedures. These are developed throughout the *Student's Book*, especially in the ***Science in practice*** section. They focus on reading, finding information, applying scientific methods, interpreting data and information, using materials and instruments with care, doing laboratory experiments, etc. These are procedures (as well as attitudes to work) that students need to become competent in because they will continue to use them (what the curriculum calls *common content*) and they will help them to achieve some of the basic competences.

ATTENTION TO DIVERSITY

When a teaching and learning process is centred around identifying students' needs, it is essential to provide students with as many educational resources as possible so that their learning can be adapted to their own capabilities, in some cases because they are greater than the group average, and in others because the pace of learning must be readjusted because a student is having difficulties. In order to cater for a diversity of levels of knowledge and learning capacity, Laboratory practicals are included for each unit. These are split into two categories, extension and reinforcement, and are included in the teacher's materials. Teachers will decide when and how these activities should be used, as by their very nature they are not always appropriate for all students.

ASSESSMENT PROCEDURES AND MARKING CRITERIA

Students' learning must be assessed systematically and periodically, both to measure their individual levels of knowledge acquisition (summative assessment at different points of the year) and to introduce any changes required to the teaching process (when the students' learning does not meet expectations). In addition to this summative assessment, which tends to take place at the end of the course (ordinary exams and resits, if required), there will be other assessments, like an initial assessment (marks do not count towards the final grade) and the final assessment, as well as continuous assessment, formative tests and activities carried out throughout the teaching and learning process and which stress that teaching is a means of guiding and analysing the learning process.

Continuous assessment will be carried out through the systematic observation and monitoring of students, i.e. everything that they produce, either individually or in groups, will be taken into consideration: written work, oral presentations and debates, classwork, research, their attitude to learning, accuracy of expression, self-assessment, etc. And for summative assessment: written tests at the end of each term and resits (during the term and at the end of the course, if the student has failed any of the assessments, and a resit final exam, if students do not pass the first one). In any case, a variety of assessment procedures will be used, so the assessments are flexible. Students can be awarded grades higher than a simple Pass in the resits, ordinary resits (if they failed one or more of the end-of-term tests) and the extraordinary resits. It should be stressed that students are not expected to produce perfectly accurate English and they

should be rewarded for communicating the message effectively in English, and not penalised heavily for grammatical or lexical errors.

5. PROGRAMMES OF STUDY

The contents of this course have been organised into 9 teaching units, which are detailed below. The teaching objectives, contents (concepts, procedures and attitudes), cross-curricular content, assessment criteria and basic competences linked to those assessment criteria are listed for each unit.

UNIT 1: INTERNAL ENERGY AND LANDFORMS

OBJECTIVES

1. Understand that rocks can change or move according to the type of stress they are subjected to, to how long the force lasts, and to conditions of pressure and temperature.
2. Recognise and find the elements of folds and faults from diagrams and photos and detail the criteria used to classify them.
3. Understand that the Earth's surface is affected by the action of internal and external geological processes which respectively generate and shape the landforms.
4. Understand the concept of isostasy.
5. Learn about the processes involved in the formation of mountain ranges.
6. Appreciate the risks of the Earth's internal activity.
7. Recognise that volcanoes, earthquakes, mountain ranges and the deformation of rocks are evidence of the internal dynamics of the planet.
8. Realise that landforms are dynamic, changing geographical features affected by many factors.
9. Become familiar with the major climatic zones and recognise the agents that create their typical landforms.
10. Identify the most distinctive features of various landforms: Karstic, coastal, glacial, fluvial and desert, from photos, drawings or diagrams.
11. Understand the growing influence of human beings on the modification of landscapes and on the dynamics of external geological agents.

CONTENTS

Concepts

- Changes in materials subjected to stresses.
- Deformations due to faults and folds. Their components and classification.
- The rock cycle. Geological agents and processes.
- The formation of mountain ranges – orogens.
- Isostasy.
- Risks associated with the Earth's internal activity: volcanoes and earthquakes.
- Landforms: associated with morphoclimatic zones and with faults and folds.

Procedures

- Differentiate between faults and folds and their components.
- Describe the processes that originate landforms and rocks.
- Recognise the main landforms produced by different geological processes.
- Analyse data on seismic and volcanic risks.
- Interpret how geological agents create different landforms.

Attitudes

- Recognise the importance of studying the Earth's interior in order to predict natural catastrophes such as earthquakes or volcanic eruptions.

- Understand the level of seismic and volcanic danger in Spain.
- Value knowledge about seismic predictions.
- Reinforce the aesthetic and scientific value of landscapes in general and particular landforms.
- Realise how important the actions of human beings can be in modifying the landscape.
- Evaluate the influence of our consumer habits on climate and the dynamics of external geological agents.
- Recognise the need to protect the Earth's surface.
- Consider a landscape as a source of aesthetic and sporting enjoyment as well as an economic resource for rural areas.

ASSESSMENT CRITERIA

1. Differentiate between the different types of stresses and relate them to the landforms they cause.
2. Recognise and identify the components of faults and folds and the criteria used to classify them.
3. Know about and define the geological processes involved in the rock cycle.
4. Understand the situations in which magmatism and metamorphism take place according to plate tectonics.
5. Apply the principles of isostasy to solve problems about the changes in weight of mass on the lithosphere.
6. Differentiate between orogens related to subduction or to continental collision.
7. Evaluate the seismic and volcanic risks in an area and relate these to where it is located relative to plate boundaries.
8. Know about the factors and agents that shape landforms. Relate these factors and agents to specific landforms

UNIT 2:PLATE TECTONICS

OBJECTIVES

1. Understand that temperatures in the Earth's interior are very high and that the energy stored there is responsible for its internal dynamics.
2. Recognise the importance of investigation into the Earth's seismic activity.
3. Be able to tell the difference between the compositional and physical layers inside the Earth.
4. Understand the theories (past and present) about the dynamics of the Earth.
5. Learn about the 'scientific revolutions' that happened throughout the history of science, such as the theory of plate tectonics.
6. Understand how oceanographic studies of the ocean floor have contributed to the development of the theory of plate tectonics.
7. Understand the principles of the theory of plate tectonics.
8. Be able to predict the evolution of plates by knowing about the dynamics of the type of boundary that separates them.
9. Understand how P and S-waves move and be able to interpret seismic wave diagrams.

CONTENTS

Concepts

- Composition and structure of the Earth's interior.
- Methods used to study the Earth.
- Continental drift.
- Study of the ocean floor.

- Plate tectonics: Location of earthquakes and volcanoes.
- Types of plates and their boundaries: convergent, divergent and transform.
- The Wilson cycle.
- Evidence for plate movement and forces.
- Subduction.

Procedures

- Locate seismic discontinuities and different layers of the Earth and describe their physical characteristics from the analysis of a seismic wave graph.
- Discuss the theories of a fixed Earth versus the theories of a moving Earth.
- Explain anomalies in the location of different rocks, living things and fossils according to the theory of plate tectonics.
- Recognise the main landforms on a map of the ocean floor.
- Calculate the speed of plate movements.
- Predict the movement of plates from knowledge of their current position and the type of boundaries that separate them.
- Determine the magnitude of an earthquake from the analysis of a seismograph.

Attitudes

- Understand that science and scientific theories are continually changing: a theory that was completely accepted at one time can be modified later by another scientist.
- Be able to critically evaluate the arguments for and against a theory.
- Realise the importance of some scientists' contribution to the development of theories, despite the opposition of others to their ideas at the time.
- Understand the importance of science in explaining the origins of seismic and volcanic activity.
- Value the collaboration and team work carried out by different experts to promote scientific advances.
- Understand the role of science in describing realities that cannot normally be perceived, such as the interior of the Earth, deep ocean environments or the movements of continents.

ASSESSMENT CRITERIA

1. Understand some of the methods used to study the interior of the Earth and the principal characteristics of its different internal layers.
2. Use knowledge about the propagation of P and S-waves to be able to interpret seismic wave diagrams.
3. Understand how theories about the internal dynamics of the Earth have developed over centuries.
4. Know about Wegener's continental drift theory and understand some of the evidence that supports it.
5. Describe the main landforms on the ocean floor and how they relate to the location of earthquakes and volcanoes.
6. Know the hypotheses for the theory of plate tectonics and apply them to real situations.
7. Identify tectonic plates on a map and be able to tell the difference between the types of boundaries that separate them, according to their movement and the geological processes they undergo.
8. Use with ease scientific terms to explain the Wilson cycle of rapture and reuniting of a supercontinent.
9. Understand some of the forces present in plate movements.

UNIT 3: THE HISTORY OF THE EARTH

OBJECTIVES

1. Understand that the Earth has had an extraordinarily long past.
2. Know that during the period of time of the Earth's existence, many geological events have occurred and the Earth has had life forms different to those of the present day.
3. Know how to date rocks.
4. Evaluate the role of fossils and palaeontology in reconstructing the history of the Earth.
5. Know about and apply the fundamental geological principles used in the study of strata.
6. Understand the different scientific interpretations of the changes that occurred in the past, such as catastrophism and uniformitarianism.
7. Learn about the principal divisions in the history of our planet, the most important geological events that occurred and the different life forms that characterised each one.

CONTENTS

Concepts

- Formation of the Solar System.
- Age of the Earth.
- Absolute and relative dating methods.
- Geological importance of fossils.
- The Earth – a continually changing planet.
- Theories of changes in the Earth.
- Principal periods of the history of the Earth.
- Distribution of continents during the Earth's history.
- Life in the Proterozoic era.
- Life in the Palaeozoic era.
- Life in the Mesozoic era.
- Life in the Cenozoic era.

Procedures

- Calculate the age of a rock from the radioactive isotopes it contains.
- Apply the principle of superposition to simple geological cross-sections.
- Work out the age and the sedimentary medium of a series of strata from an analysis of their lithology and fossil content.
- Recognise the principal fossil groups and some characteristics of their anatomy and way of life.
- Locate a series of events on a scale of geological time.

Attitudes

- Value the role of science in giving a logical explanation of reality.
- Recognise that, in the history of geology, different hypotheses have been put forward to explain geological changes.
- Adopt a critical attitude towards different hypotheses and theories. Formulate arguments to support or reject them.
- Recognise the importance of studying the past in the analysis of geological processes and how this has affected present biological diversity.

ASSESSMENT CRITERIA

1. Using appropriate scientific language, explain current ideas about the formation of the Solar System and the Earth according to the nebular theory.

2. Differentiate between absolute and relative dating and know about the methods used for each.
3. Have a clear idea about the origin of fossils and the information they can provide.
4. Recognise some typical fossil groups from photographs or collections.
5. Understand the basic principles of superposition and animal succession and know how to apply them when analysing simple geological cross-sections.
6. Understand that the Earth undergoes many types of changes and that science has put forward different hypotheses to explain them.
7. Know the main geological time divisions and the criteria used to establish them.
8. Know about the most important geological events in the history of the Earth, the evolution of the climate and the living things that have appeared successively on the planet.

UNIT 4: CELLS

OBJECTIVES

1. Know about the different levels of biological organisation.
2. Value the importance of cell theory related to living things.
3. Know the basic parts of a cell and the importance of each one.
4. Explain cellular functions.
5. Describe the structure of a eukaryotic cell.
6. Know about the different organelles in the cytoplasm.
7. Describe the components of the nucleus.
8. Differentiate animal cells from plant cells.
9. Understand why cells need to reproduce.
10. Know the stages of mitosis.
11. Know the stages of meiosis.

CONTENTS

Concepts

- Levels of biological organisation.
- Cell theory.
- Functions and structure of cells.
- Types of cells.
- Eukaryotic cells: structure and types.
- Reproduction of cells: mitosis.
- Meiosis.

Procedures

- Observe and interpret cells using images produced by microscopes.
- Draw diagrams of cellular organelles.
- Interpret images that show cellular organelles.
- Debate the similarities and differences between the functions of nutrition, interaction and reproduction of prokaryotic and eukaryotic cells.
- Draw comparative diagrams of animal and plant cells.
- Create conceptual diagrams that compare mitosis and meiosis.

Attitudes

- Recognise and accept that all living things have the same chemical, structural and functional units, despite the variety of organisms.
- Present the basic concepts of cell theory correctly in both oral and written forms.
- Be rigorous in experimental work.

- Reflect on the existence of single-celled organisms that carry out the same fundamental functions as multicellular organisms.
- Reflect on the consequences of the differences between prokaryotic and eukaryotic cells.
- Value the fundamental importance of reproduction in maintaining life.

ASSESSMENT CRITERIA

1. Indicate the different levels of biological organisation.
2. Understand that the cell is the anatomical and physiological unit of living things.
3. Know the basic principles of the cell theory.
4. Detail and explain cellular functions.
5. Differentiate between prokaryotic and eukaryotic cells and indicate which organisms have these cells.
6. List the different cellular organelles and establish the relationship between their structure and function.
7. Understand the importance of the cell nucleus as the place where genetic information is found.
8. Establish the differences between animal and plant cells detailing their different characteristics.
9. Understand the importance of mitosis and meiosis and compare both processes.
10. Describe the processes of mitosis through appropriate diagrams and drawings.
11. Value the necessity of meiosis in multicellular organisms.

UNIT 5: BIOLOGICAL INHERITANCE

OBJECTIVES

1. Understand the fundamental concepts of genetics.
2. Understand the basic laws of genetic transmission.
3. Explain simple cases of qualitative inheritance.
4. Relate mitosis and meiosis to genetic transmission.
5. Learn about the chromosome theory of inheritance.
6. Understand the different ways sex is determined.
7. Value the importance of inheritance linked to sex in genetic case studies.
8. Understand the concept of mutation.
9. Relate mutations to the variety in individuals and to evolution.
10. Understand the causes of mutations.

CONTENTS

Concepts

- Basic concepts of genetics.
- Mendel's laws.
- Special genetic cases.
- Theory of chromosome inheritance.
- Location of genes.
- Genetic determination of sex.
- Inheritance linked to sex.
- Mutations: types and causes.

Procedures

- Solve problems based on Mendelian genetics with autosome traits and traits linked to sex.
- Compare the different mechanisms to determine sex genetically.
- Observe photographs of karyotypes.
- Study the transmission of some traits in *Drosophila*.

- Create illustrations of the gametes produced by different types of individual.
- Ask questions about the present and future applications of genetics and the debate that surrounds them.
- Define the main concepts of Mendelian genetics and correctly describe Mendel's laws and the theory of chromosome inheritance.

Attitudes

- Recognise the advances in genetics and their contribution to society.
- Show interest in understanding the mechanisms of inheritance.
- Reflect on the ethical implications of the practical applications of genetics.
- Be rigorous in solving genetic problems in case studies.
- Recognise the importance of collaboration between scientists in genetic discoveries.
- Understand the problems created by some of the advances in genetics.
- Value the importance of mutations in the process of evolution.
- Show willingness to avoid environmental agents that can cause mutations.

ASSESSMENT CRITERIA

1. Define the basic concepts of genetics.
2. Understand the relationship between dominant, recessive and co-dominant genes.
3. Know and explain Mendel's laws and evaluate their importance in genetic studies.
4. Create simple diagrams of genetic transmission.
5. Indicate and describe some special genetic cases, such as multiple alleles and quantitative inheritance.
6. Describe the basic points of the theory of chromosome inheritance.
7. Differentiate between linked genes and independent genes, establishing the relationship of their exception in relation to Mendel's principle of independent assortment.
8. Solve simple Mendelian problems.
9. Know about the different types of sex determination systems.
10. Understand simple cases of inheritance linked to sex and represent them using diagrams.
11. Define and explain the concept of mutation, indicating the different types and causes.

UNIT 6.1: HUMAN GENETICS

OBJECTIVES

1. Know about the various aspects of genetic studies in humans.
2. Value the importance of studying the human karyotype.
3. Differentiate between the influence of the genotype and the environment on human phenotypes.
4. Understand the existence of qualitative and quantitative traits which explain the variation in human phenotypes.
5. Apply Mendel's laws to human cases.
6. Know how sex is determined in human beings.
7. Understand that alterations which can occur in the genome can affect (sometimes seriously) the phenotype.

8. Distinguish between autosome, chromosome and chromosome number alterations that can affect human beings.
9. Know the causes of genetic malformations
10. Understand the importance of genetic diagnosis.

CONTENTS

Concepts

- Characteristics of genetic studies in humans.
- Human karyotype.
- Quantitative and qualitative inheritance in humans.
- Diagnosis of genetic diseases.
- Congenital malformations.
- Autosomal disorders and disorders linked to sex.
- Human disorders related to chromosomes and the number of chromosomes.

Procedures

- Observe photographs of male and female human karyotypes.
- Study karyotypes with chromosome and chromosome number anomalies.
- Interpret family trees.
- Solve problems related to case studies of human genetics.
- Identify human genetic traits that are easy to see and study their transmission in relatives.
- Create a graph about a trait in the class and come to appropriate conclusions.
- Participate in debates about the problems of human genetic diseases.
- Find additional information about well-known genetic diseases.

Attitudes

- Respect the existence of variation among humans.
- Accept all humans as equal.
- Criticise attitudes that propose the existence of intellectual differences according to race.
- Show empathy for people who suffer genetic diseases.
- Value the importance of diagnosis of genetic diseases.
- Promote the prevention of congenital malformations due to bad habits during pregnancy.
- Show interest in the new discoveries that can improve the life of people affected by genetic anomalies.
- Value the knowledge of genetic scientists and experts.

ASSESSMENT CRITERIA

1. Explain the special characteristics of genetic studies in humans and evaluate the difficulties and how to avoid them.
2. Describe the male and female human karyotype.
3. Understand the causes of variation among humans, differentiating between genetic and environmental causes.
4. Give examples of qualitative and quantitative traits in humans.
5. Draw diagrams to illustrate the transmission of qualitative human traits and solve simple problems related to genetic case studies.
6. Define the concept of congenital malformations and indicate their causes and ways of avoiding them.
7. Value the importance of the diagnosis of genetic diseases and describe the most common techniques used to carry it out.
8. Know the most common autosome, chromosome and chromosome number disorders and their consequences.

UNIT 6.2: MOLECULAR GENETICS

OBJECTIVES

1. Value the importance of nucleic acids as carriers and transmitters of inheritance.
2. Understand and describe the characteristics of DNA.
3. Describe the processes of DNA replication and transcription.
4. Understand the way the genetic message is formed.
5. Know the characteristics of the genetic code.
6. Understand the basic techniques used in genetic engineering.
7. Value the importance of genetic engineering in daily life and in solving medical problems.
8. Differentiate between the traditional biotechnological processes and those based on genetic engineering.
9. Understand the mechanisms to obtain clones and genetically modified organisms.
10. Explain how biotechnology improves the quality of human life.

CONTENTS

Concepts

- The inheritance molecule: the study of DNA.
- Duplication of DNA.
- Transcription and translation of the genetic message.
- The genetic code.
- Genetic engineering: techniques, practical applications and implications.
- The Human Genome Project.
- Traditional biotechnology.
- Modern biotechnology: procedures and applications.

Procedures

- Make three-dimensional models of DNA.
- Use diagrams to understand the processes of molecular genetics.
- Read and comment on news in the press about biotechnology.
- Draw diagrams of the processes of genetic engineering.
- Find information about the technology using recombinant DNA.
- Suggest biotechnical problems and look for possible solutions.
- Create tables that summarise the current biotechnological applications.

Attitudes

- Value the work carried out by researchers who have contributed to the field of molecular genetics.
- Recognise the value of knowing the genetic code in molecular genetics discoveries.
- Be aware of the risks of some experiments in molecular genetics.
- Value the importance of the Human Genome Project.
- Show interest in the ethical implications of genetic engineering.
- Value the benefits that biotechnology can give us based on genetic engineering.
- Show interest in new biotechnological discoveries.
- Value the improvement in the quality of life that biotechnology can provide.

ASSESSMENT CRITERIA

1. Know the basic structure of DNA and name its components.
2. Name the stages of the cell cycle and the events that happen at each stage.
3. List the stages of the processes of duplication, replication and translation.
4. Name the different types of RNA and describe the function of each.

5. Define the genetic code and explain its characteristics.
6. Understand genetic engineering techniques and explain their most important applications.
7. Apply knowledge of genetic engineering by commenting on its potential implications.
8. Describe traditional biotechnological processes and evaluate their importance in our daily life.
9. Explain the basic principles of cloning and the genetic modification of organisms.
10. Know the biomedical applications of new biotechnology techniques and describe the most important ones.

UNIT 7: THE ORIGIN AND EVOLUTION OF LIFE

OBJECTIVES

1. Differentiate between the various hypotheses that give explanations for the origin of life.
2. Know about the characteristics of primitive Earth that made the appearance of life possible.
3. Differentiate between static and evolutionary theories.
4. Know about the evidence that supports the existence of an evolutionary process.
5. Know about and compare the different evolution theories.
6. Understand the reasoning behind the principles of present-day evolution theory.
7. Identify the stages in the process of formation of a new species.
8. Understand the existence of microevolution and macroevolution.
9. Know the basic evolutionary stages of how present-day humans appeared.

CONTENTS

Concepts

- Origin of life: theories.
- Static and evolutionary theories.
- Evidence of evolution.
- Lamarckism, Darwinism, and neo-Darwinism.
- Other evolutionary theories.
- Origin of new species.
- Microevolution and macroevolution.
- Evolution of hominids and the appearance of human beings.

Procedures

- Carry out simple experiments to disprove the theory of spontaneous generation.
- Use documented sources in the historical analysis of theories of evolution and the origin of life.
- Analyse texts about evolution.
- Discuss, compare and criticise the different theories of evolution.
- Study and explain the evolution of different groups of animals.
- Discuss the origin and evolution of human beings.

Attitudes

- Develop critical thinking when thinking about facts that appear to corroborate theories that are difficult to demonstrate, such the theory of the origin of life.
- Recognise the ethical, social and philosophical problems arising from the theory of evolution and the origin of life.

- Recognise the relationship between genetics and evolution.
- Respect others' opinions and value the specific contributions of each person in an attempt to explain scientific problems.
- Value experimental and non-experimental evidence that defends a theory.
- Show interest in new discoveries that are made about evolutionary processes.

ASSESSMENT CRITERIA

1. Describe the theory of spontaneous generation and explain the evidence that disproved this theory.
2. Know Oparin's theory and the experiments that support it as well as the present-day hypothesis about the origin of life.
3. Know about the different evolutionary and pre-evolutionary theories and describe their respective arguments that explain the variety of living organisms.
4. Describe the evidence for the process of evolution and its importance.
5. Detail the basic principles of Lamarckism and Darwinism.
6. Compare the evolutionary theories of Lamarck and Darwin, describing the similarities and differences.
7. Explain the current theories of evolution.
8. Describe the stages in the formation of new species.
9. Differentiate between microevolution and macroevolution.
10. Show the evolutionary process that led to the appearance of present-day human beings.

UNIT 8: ECOSYSTEMS

OBJECTIVES

1. Know the composition of an ecosystem.
2. Understand the difference between the cycle of matter and the cycle of energy in ecosystems.
3. Know the different trophic levels in an ecosystem.
4. Understand food web diagrams.
5. Recognise the importance of the production in an ecosystem and know about the different types of producers.
6. Value the importance of trophic pyramids in the study of ecosystems
7. Know about the existence of biogeochemical cycles.
8. Identify the most important characteristics of Spanish ecosystems.
9. Know about terrestrial and marine biomes.
10. Understand the importance of the infestations in altering ecosystems.
11. Evaluate the effects that human beings have in their relationships with ecosystems.

CONTENTS

Concepts

- Ecosystems: the cycles of matter and energy.
- Trophic levels.
- Production in ecosystems.
- Trophic pyramids.
- Biogeochemical cycles.
- Terrestrial and marine ecosystems.
- Biomes.
- Invasion of ecosystems and infestations.
- Consequences of human actions on ecosystems.

Procedures

- Create food chains and webs.
- Calculate trophic parameters.
- Study and interpret trophic pyramids.
- Interpret diagrams of biogeochemical cycles.
- Predict and prevent the consequences of human actions on ecosystems.
- Locate different Spanish ecosystems and major world biomes on maps.
- Create action plans in order to avoid infestations of ecosystems.
- Read and interpret news items on environmental changes brought about by human beings.

Attitudes

- Recognise the complexities of the relationships between the components of ecosystems.
- Respect all the components of food webs which contribute to maintaining ecosystems.
- Understand the importance of avoiding forest fires.
- Recognise the negative impacts that some human activities have on the environment.
- Evaluate their own attitude towards the environment.
- Demonstrate the role of science in describing realities that we cannot perceive normally, such as the interior of the Earth, ocean depths or the movements of continents.
- Show awareness of the need to look after and respect the various components of ecosystems.
- Show respect towards people whose work contributes to the conservation of ecosystems.

ASSESSMENT CRITERIA

1. Understand an ecosystem as a dynamic and complex concept.
2. Understand the cycles of matter and energy in ecosystems.
3. Name the trophic levels present in an ecosystem and the role that each one plays.
4. Define the main trophic parameters.
5. Know about the meaning of food chains, webs and pyramids and indicate the importance of each one.
6. Describe simple biogeochemical cycles.
7. Know about the main Spanish ecosystems and their characteristics.
8. Define the concept of a biome, differentiating between terrestrial and marine biomes.
9. Know the causes of infestations and ways to deal with them.
10. Explain the effects of human actions on ecosystems and the creation of new ecosystems.

UNIT 9: LIVING THINGS IN THEIR ENVIRONMENT

OBJECTIVES

1. Understand that living organisms need to adapt to their environment.
2. Know how plants and animals adapt to various environmental factors.
3. Understand that living things also modify the environment.
4. Value the importance of populations in the survival and development of a species.
5. Understand the stages of growth of a population.
6. Differentiate between the different growth strategies of populations.
7. Understand the basic concepts of communities.

8. Understand the concept of ecological succession.
9. Describe the composition and formation of soil.
10. Know about the different relationships between members of a community.

CONTENTS

Concepts

- Influence of environmental factors on living things.
- Adaptations of organisms to their environment.
- Modifications of the environment due to living things.
- Populations: concept and types.
- Dynamics of populations.
- Population growth strategies.
- Communities and biodiversity.
- Dynamics of communities.
- Soil.
- Interspecific relationships in communities.

Procedures

- Study graphs that describe adaptations of animals and plants.
- Detect and control variables in an environmental problem.
- Interpret graphs of population growth.
- Study a community near the school
- Create food chains and webs.
- Analyse data to identify the growth strategy of a population.
- Study a soil sample to identify its physical and chemical properties.
- Identify interspecific relationships from written information.

Attitudes

- Value the importance of adaptations for the survival of living organisms.
- Recognise the advantages and disadvantages of populations versus isolated individuals.
- Respect all life forms and recognise their vital role in communities.
- Be aware of the necessity of preserving biodiversity.
- Collaborate in preventing soil erosion.

ASSESSMENT CRITERIA

1. Explain the adaptations of animals and plants to changing environmental factors.
2. Describe some modifications to the environment due to living things.
3. Understand the importance of populations and detail the advantages and disadvantages they have versus isolated individuals.
4. Know about population growth curves and distinguish the different stages of growth.
5. Differentiate between the growth strategies of populations.
6. Understand the meaning of age pyramids and their use in population growth studies.
7. Define concepts related to communities, such as biodiversity and succession.
8. Describe the processes that occur in a primary succession.
9. Know the components of soil and the changes it undergoes throughout its evolution.
10. Value the importance of soil, the causes of its destruction and measures to prevent this.

8.1. Programación de la Sección bilingüe de inglés.

8.1.1. Objetivos

En Geografía e Historia de nuestra sección bilingüe de inglés, además de los objetivos generales expuestos en la programación, se trabajará de cara a conseguir los siguientes objetivos:

1. Comunicarse oralmente en inglés, entendiendo mensajes sencillos y expresándolos a su vez.
2. Adquirir una comprensión lectora de textos básicos del área de Ciencias Sociales, asimilando las estructuras gramaticales propias del idioma (por etapas y con orientaciones concretas del Departamento de inglés).
3. Saber expresar por escrito conocimientos básicos del área, utilizando correctamente las estructuras gramaticales del inglés (por etapas) y emplear el vocabulario específico de la materia en inglés.
4. Utilizar el idioma inglés como medio para conocer y valorar otras realidades sociales, en particular las relacionadas con la cultura anglosajona.
5. Conocer las expresiones comunes en el diálogo en clase profesor- alumno, alumno-alumno (por ejemplo, para hacer las preguntas habituales como para contestar a las preguntas del profesor) Sabiendo que la mayoría de los alumnos que cursan 1º ESO se inician por primera vez en este idioma.

8.1.2. Metodología.

Con el fin de alcanzar esos objetivos, el procedimiento metodológico se basará en el Aprendizaje Integrado de Contenidos y Lenguas Extranjeras (AICLE) que presta especial atención a un modelo que permite al alumno una activa participación en la resolución de tareas y actividades haciendo uso de otra lengua.

La propuesta metodológica partirá de las siguientes premisas:

- La mayor fuente de aportación lingüística provendrá de materiales textuales y auditivos y por tanto las destrezas más practicadas serán la lectura y la comprensión escrita y la expresión oral.
- En las clases se emplearán textos, audiciones y conversaciones de nivel asequible y teniendo en cuenta las especiales circunstancias de un nivel como es el del primer ciclo de ESO, en el que se nos podemos encontrar con agrupaciones de alumnos con notables diferencias en su nivel de inglés.
- La lengua se contempla desde un punto de vista más léxico que gramatical, haciendo más hincapié en el aprendizaje de vocabulario que en el uso de estructuras gramaticales graduadas. La gramática, se entiende que debe ser atendida preferentemente en la clase de inglés.
- Inicialmente, tras la realización de una prueba de nivel para conocer la realidad del alumnado, se comenzará con tareas y actividades sencillas para

evitar que el alumno se pueda sentir perdido y frustrado. La intención es ir aumentando la adquisición de esas competencias a lo largo del curso.

Junto a estas premisas iniciales el trabajo en el aula se sustentará en los siguientes ejes:

1. Enseñanza centrada en el alumno, que promueva su implicación. Para ello se va a procurar utilizar explicaciones que vayan de lo particular a lo general, el empleo de ejemplos y situaciones reales y la realización de trabajos o proyectos en cada trimestre.
2. Enseñanza flexible y facilitadora, atendiendo a los distintos estilos de aprendizaje. Esto implica facilitar la comprensión del contenido y del contexto mediante el uso de textos de menor complejidad, llevando a cabo tareas de comprensión, empleando la alternancia en el uso de las lenguas, y también usando diversas estrategias como: repetir, parafrasear, simplificar; ejemplificar, hacer analogías: usar imágenes y emplear gráficos de organización de ideas, esquemas, cuadros-resumen, etc.
3. Aprendizaje más interactivo y autónomo, aspectos que se intentan promover y desarrollar mediante el trabajo por parejas y por grupos y en el planteamiento de estrategias de comprensión y seguimiento de la clase (mostrar falta de comprensión, pedir aclaraciones, distinguir lo esencial, deducir, etc.).
4. Uso de múltiples recursos y materiales, especialmente las TIC, que aporta un contexto más rico y variado y promueve también la interactividad y la autonomía del alumno. Este aspecto se llevará a cabo sobre todo con el empleo de recursos digitales y en especial de la Web (textos, podcasts, vídeos, etc.) y con el uso de herramientas y espacios de la Web 2.0 como el blog de nuestra sección Come on!.
5. Junto a estos recursos digitales los alumnos usarán un libro de texto impreso en inglés, específicamente para la enseñanza de la sección bilingüe. En concreto se ha optado por *Lingua Frame* para 1º de ESO y los de la editorial *Vicens Vives* para 2º y 4º de ESO. Junto a este material los alumnos también dispondrán de la unidad en español, que se facilitará mediante fotocopias, páginas web o archivos alojados en nuestra sección del departamento

A partir de estas líneas metodológicas básicas se combinarán una serie de actividades variadas en las que tuvieran cabida las cuatro habilidades: *Reading*, *listening*, *speaking* y *writing*. Aunque, como ya se ha indicado anteriormente, se ha priorizado la lectura y comprensión (*Reading and comprehension*) y la escucha y pronunciación. En este último apartado resultará de especial valor la aportación del lector, quien acudirá cada quince días a nuestra clase.

Cada unidad en inglés será presentada a través de un cuadro-resumen en inglés y en esa primera clase de introducción también se dará a conocer el vocabulario específico de inglés que se iba a trabajar relacionado con esa unidad de Ciencias Sociales. A lo largo de cada unidad se trabajarán textos para responder cuestiones de comprensión; otras tareas permitirán relacionar ideas y conceptos, o la selección de opciones. También se introducirá en el comentario de imágenes como medio para reforzar la expresión oral y la pronunciación, juntamente con tareas de simulación como pretexto para iniciar temas para hablar (*talking points*).

En cada trimestre se abordará también la realización de un pequeño proyecto o trabajo en inglés. Así, en el primer trimestre los alumnos presentarán un trabajo individual por escrito sobre desastres naturales (“*Natural Hazards*”). En el segundo los alumnos confeccionarán por grupos de tres o cuatro un mural que recogiera las principales características de algún medio natural y sus problemas medioambientales (“*Natural landscapes and environmental problems*”), y en el tercer trimestre, los alumnos realizarán un trabajo por parejas sobre las características físicas del Reino Unido.

Estas actividades se complementan con el aporte informativo de contenidos digitales y audiovisuales, tales como el visionado y escucha de videos diversos sobre contenidos relacionados con la cultura anglosajona (“Stonehenge”, “tectónica de placas”, etc...).

Por último, también es un complemento muy motivador y enriquecedor actividades extraescolares como las jornadas de inmersión lingüística en Hornachos, organizada por la asociación *Natuex Park* y otras que irán surgiendo en nuestra localidad.

8.1.3. Contenidos.

1º de ESO.

First Part: GEOGRAPHY

UD.1.- Our planet Earth: The solar system. Planet Earth. Rotation of the earth: days and nights. Revolution of the Earth.

UD.2.- The representation of the Earth: Latitude and longitude. The representation of the Earth.

UD.3.- The Earth’s relief: The outer layer of the Earth. Internal forces in the formation of relief. External forces in the formation of relief. The continents. The Earth’s relief. Europe’s relief. Spain’s relief.

UD.4.- Rivers and Seas: Water in nature. The Earth’s oceans, seas, rivers and lakes. Ocean dynamics. Rivers of Europa and the Iberian Peninsula.

UD.5.- Weather and Climate: The atmosphere. Temperature. Air humidity and precipitation. Atmospheric pressure and wind.

UD. 6.- Climates and Landscapes of the Earth: The Earth’s climates. Equatorial and tropical landscapes. Desert, polar and mountain landscapes. Oceanic and continental landscapes. The Mediterranean landscape. Europe’s climates and landscapes. Spain’s climates and landscapes.

UD.7.- Society and the Environment: The Earth is an ecosystem. Natural hazards. Hazards caused by human activity. Climate change. The exploitations of natural resources.

Second part: HISTORY

UD.8. - Prehistory: The first humans. The Paleolithic Age. Cave Art. The Neolithic Age: food production. The Metal Ages.

UD. 9.- The First Civilizations: Mesopotamia and Egypt. Mesopotamia, the land between two rivers. Egypt at the time of the pharaohs. Everyday life in Ancient Egypt. God ant temples. Egyptian tombs.

UD.10.- The Greek world. The Greek world: the poleis. The Greek colonies. Democracy in Athens. Everyday life in Athens. Alexander the Great ´s empire.

UD.11. The Roman Empire. Rome ´s origins: from monarchy to republic. Rome ´s conquest of the Mediterranean. The Roma Empire. Society And economy in the Roman Empire. The Germanic kingdoms. The Byzantine Empire.

UD. 12. Spain under the Romans: Pre-roman peoples: the Iberians and the Celts. The Roman province of Hispania. Everyday life in the cities. Le legacy of Rome. The Visigoths in Hispania.

UD. 13. The legacy of classical cultural. The Greek and Roman gods. Classical culture. Greek architecture. Roman architecture and city planning. Sculpture, pottery and painting in Greece. Sculpture, painting and mosaic in Roma.

2º de ESO.

Unit 1. The fragmentation of the ancient world.

- Germanic kingdoms. Visigoths in Spain.
- Byzantium, the Roman Empire in the East.
- The Carolingian Empire.

Unit 2. Islam and Al-Andalus.

- The origin and expansion of Islam.
- Islam on the Iberian Peninsula: Al Andalus.
- The evolution of Al-Andalus.
- The economy and society of Al Andalus.
- Islamic art and culture.

Unit 3. Feudal Europe.

- The birth of feudal Europe.
- The feudal society.
- Economy: the fiefdom.
- Castle and monasteries.
- Romanesque art.

Unit 4. Medieval cities.

- The return of urban life. The medieval cities.
- Urban activities.
- Urban society.
- Crisis in the lower Middle Age.
- Gothic art.

Unit 5. The formation and expansion of the peninsular kingdoms.

- The Cantabrian kingdoms.
- The Pyrenean counts and kingdoms.
- Expansion in the 11th and 12th centuries.
- The Iberian Peninsula: a meeting of cultures.
- El Camino de Santiago.
- Romanesque art on the Iberian Peninsula.

Unit 6. The great peninsular kingdoms.

- The consolidation of the Peninsular kingdoms.
- Medieval institutions.
- The Crown of Castile.
- The Crown of Aragon.
- The kingdom of Navarre.
- Social and political conflict in the Late Middle Ages.
- Gothic art on the Iberian Peninsula.

Unit 7. The modern age. Renaissance and reformation.

- Humanism and the printing press.
- The Reformation and the Counter-Reformation.
- The new spirit of the Renaissance.
- The renaissance art.
- The spread of the Renaissance.

Unit 8. The Catholic monarchs.

- The dynastic union and the expansion.
- The organisation of the new monarchy.
- The organisation of the economy and society.
- Humanism and the Renaissance in Spain.

Unit 9. The great geographical discoveries and the Spanish Empire in America.

- The great sea voyages.
- Castile discovers a new continent.
- Pre-Columbian peoples.
- The conquest and organisation of the American Empire.

Unit 10. The Habsburg dynasty.

- The Empire of Charles I.
- The Spanish Empire of Philip II.
- Spanish economy and society in the 16th century.
- The decline of the Empire in the 17th century.
- Economic and social crisis in the 17th century.
- The Baroque.

Junto a estos contenidos generales los alumnos deberán realizar un proyecto de investigación sobre algún acontecimiento clave en la historia del Reino Unido, que será expuesto en clase.

Durante el presente curso, los alumnos de este nivel no tendrán manual en inglés de referencia y por ello se hace muy necesario el uso de las TIC, así como de la elaboración de materiales por parte de la profesora y los propios alumnos. Como página de referencia, donde el grupo tendrá acceso a los contenidos trabajados en el aula, se deberá utilizar la web del Departamento:

http://iesbdebraganza.juntaextremadura.net/gh/?page_id=1059

Además, se podrá trabajar con otras páginas y herramientas, tal como se especifica en la tabla de contenidos

Unit	Vocabulary practice	Practice	TIC
0	Geography tools (Introducción a la Geografía)	- How to read a map - How to locate places on maps - Calculate distance using a map scale	http://www.kidsgeo.com/geography-games/latitude-longitude-map-game.php http://education.nationalgeographic.com/?ar_a=1 http://www.nationsonline.org/oneworld/first.shtml https://www.youtube.com/watch?v=MZ5xo9RYM5Q https://www.youtube.com/watch?v=-j-SWKtWEcU
1	Spain's natural environment. Natural landscapes (El medio físico)	-How to make and interpret a bar graph - Read weather maps - Make and interpret a climate graph	www.greenpeace.org www.unep.org https://www.youtube.com/watch?v=0A5eeE93uEA https://www.google.com/maps http://kids.nceas.ucsb.edu/biomes/
2	States of the World (La organización política del mundo)	-Use, in an autonomous way, the technological resource to search, synthesis and give information about countries	http://www.englishexercises.org/makeagame/viewgame.asp?id=6605 http://www.sheppardsoftware.com/European_Geography.htm http://www.buzzle.com/articles/list-of-european-countries-and-capitals.html https://quizlet.com/49773128/asia-countries-and-capitals-flash-cards/ https://www.youtube.com/watch?v=5Xsi9Pzym8Y http://serbal.pntic.mec.es/ealg0027/amerisur1e.html http://lizardpoint.com/geography/centralamer-caps-quiz.php https://quizlet.com/797926/north-americasouth-america-central-america-countries-capitals-flash-cards/ http://www.sporcle.com/games/g/africacapitals
3	Population (La población)	- Make and interpret a population pyramid - Compare demographic trends	http://www.prb.org/Publications/Datasheets/2015/2015-world-population-data-sheet/world-map.aspx#map/world/population/2015

		<p>in developed and less-developed countries</p> <ul style="list-style-type: none"> - Analyse different population rates - Describe types of migratory movements 	<p>http://www.worldometers.info/world-population/ http://populationpyramid.net/ http://www.bbc.co.uk/schools/gcsebitesize/geography/migration/migration_trends_rev2.shtml http://www.geography.learnontheinternet.co.uk/topics/migration.html http://www.undp.org/content/undp/en/home/mdgoverview.html</p>
4	Urban settlement (Las ciudades, unidad 8)	<ul style="list-style-type: none"> -Read urban plans - Read and comment on texts with a geographical content - Interpret statistical data, maps and/or photos related to the unit content 	<p>https://www.fourmilab.ch/earthview/cities.html http://www.geography-map-games.com/geography-games-Geography-Cities-of-the-World- pageid47.html http://www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_living_rev1.shtml https://www.google.com/maps</p>
5	The economy (El mundo, una economía globalizada)	<p>Compare economic systems</p> <p>Analyse present-day economic problems</p> <p>Interpret and prepare a choropleth map</p>	<p>http://www.bbc.co.uk/schools/gcsebitesize/geography/video/economic_change/ http://www.bbc.co.uk/schools/gcsebitesize/business/aims/aimsandactivitiesrev3.shtml http://www.bbc.co.uk/bitesize/ks3/geography/interdependence/development/revision/2/</p>
6	The primary sector (El sector primario)	<ul style="list-style-type: none"> -Describe the different forms of primary activities - Analyze rural landscapes 	<p>http://revisionworld.com/gcse-revision/geography/agriculture/factors-affecting-farming http://www.bbc.co.uk/bitesize/standard/geography/farming/farming_system/revision/2/</p>
7	The secondary sector (El sector secundario)	<ul style="list-style-type: none"> - Compare traditional and alternative energy sources - Compare industries and their locations 	<p>http://www.bbc.co.uk/schools/gcsebitesize/geography/economic_change/characteristics_in_dustry_rev1.shtml http://www.bbc.co.uk/schools/gcsebitesize/geography/energy_resources/energy_rev1.shtml</p>
8	The tertiary sector (El sector terciario)	<ul style="list-style-type: none"> -Classify types of services - Analyze the global distribution of services 	<p>http://www.bbc.co.uk/schools/gcsebitesize/geography/globalisation/globalisation_rev1.shtml http://www.bbc.co.uk/schools/gcsebitesize/geography/globalisation/globalisation_rev3.shtml</p>
9	Development (El reto del desarrollo)	<ul style="list-style-type: none"> -analyze and measure 'development' - Examine social and economic contrasts in developed and less developed countries 	<p>http://www.bbc.co.uk/bitesize/ks3/geography/interdependence/development/revision/4/ http://www.bbc.co.uk/schools/gcsebitesize/geography/development/aid_rev1.shtml http://hdr.undp.org/en/rethinking-work-for-human-development</p>
10	The environment (La	<ul style="list-style-type: none"> -Describe human impacts on the environment -Evaluate 	<p>http://www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/ http://www.wclimate.com/world-climate-summit-2015/</p>

sostenibilidad ambiental)	environmental protection measures	https://www.youtube.com/watch?v=VTfgNFz1DBM
---------------------------	-----------------------------------	---

4º ESO

Unit 1. The 18th century: the Ancient Regime in crisis.

- The causes of the crisis.
- Growth of the economy and the bourgeoisie.
- The first parliamentary systems: Great Britain and The United States.
- The Enlightenment versus the Ancient Regime.
- The Bourbon monarchy in Spain.
- Art. From Rococo to Neoclassicism.

Unit 2. The Age of the Liberal revolution (1789-1871).

- The causes of the French Revolution.
- The development of the French Revolution (1789-1799).
- Napoleon rules Europe.
- The legacy of the French Revolution.
- The Restoration: between absolutism and liberalism (1815-1848).
- Nationalism in Europe: new states in Europe,

Unit 3. The origins of industrialisation

- The driving forces of industrialisation.
- Agricultural changes.
- The steam engine.
- The development of industry and the growth of trade.
- The triumph of capitalism.
- Social changes and new social movements.

Unit 4. Spain in the 19th century: building a liberal regime.

- War and liberal revolution (1808-1814).
- Goya and the birth of the contemporary art.
- Ferdinand VII: the restoration of absolutism (1814-1833).
- The Carlists War.
- Isabella II and the building of the liberal state (1833-1868).
- Six years of democracy (1868-1874).
- The Bourbon restoration (1875-1902).

Unit 5 Industrialisation and social change in Spain.

- An industrial revolution in Spain?
- Population and agriculture.
- The beginning of the industrialisation in Spain.
- Mining, banking and railway network.
- Social changes.
- The workers' movement.
- Art in 19th century Spain.

Unit 6. The age of Imperialism

- Why was there imperial expansion?
- The triumph of industrial capitalism.
- European migrations.
- Europe conquers the world.
- The colonial empires.
- The legacy of colonialism.
- Art and society at the turn of the century.

Unit 7. The First World War and the Russian Revolution.

- Why did war break out in Europe in 1914?
- The phases of the war.
- A total war.
- Why was there a revolution in Russia?
- The Russian Revolution.
- Europe at the end of the war.
- Avant-garde art.

Unit 8. The interwar period.

- What problems led to a new world war in just 20 years?
- The United States: from prosperity to crisis.
- 1929: the capitalist economy in crisis.
- The crisis of democracy: fascism in Italy.
- Germany: the rise of Nazism.
- The Nazi regime: a totalitarian system.
- The Soviet Union: Stalin's dictatorship.
- The art of the interwar period.

Unit 9. Spain in the first third of the 20th century (1902-1931).

- The crisis of the Restoration.
- The dictatorship of Primo de Rivera.
- The Second Spanish Republic.
- The Civil War.

Unit 10. The Second World War.

- Why did the Second World War happen?
- Development of the war.
- A total war.
- The consequences of the war.
- The United Nations (UN).

Unit 11. A divided world: Cold War and decolonisation.

- How did Europe come to be divided by an "Iron Curtain"?
- The conflicts of the Cold War.
- Towards the peaceful coexistence.
- The decolonisation process.
- Decolonisation and neo-colonialism.
- The conflict in the Middle East.

Unit 12. Capitalism and communism: two opposing systems.

- The capitalist and communist blocs
- The construction of a new, united Europe.
- The evolution of the two blocs.

Unit 13. Spain: The Franco dictatorship (1939-1975).

- The post-war period (1939-1959).
- Economic development and crisis (1939-1975).

Unit 14. Transition and democracy in Spain.

- The transition to democracy (1975-1978).
- The Constitution of 1978.
- Democratic governments.
- Economic and social changes.

Unit 15. The world today.

- The end of the Cold War.
- A new world order.
- Europe after the fall of the Berlin Wall.
- The construction of the European Union.
- An unstable world: the conflicts of the 21st century.

El currículo establecido para este nivel de curso es extraordinariamente extenso, la carga horaria de tres horas semanales únicamente resulta insuficiente y, además, en una sección bilingüe nos lleva a un tratamiento no excesivamente profundo en los contenidos y a la necesidad de que los propios alumnos preparen alguna unidad por su cuenta, con el debido asesoramiento del profesor. A lo largo del curso se decidirá qué contenidos trabajarán a través de proyectos y presentaciones en el aula

8.1.4. Evaluación.

A la hora de la valoración de esos objetivos se emplearán como instrumentos de evaluación:

- a) Los aspectos de comprensión, pronunciación, riqueza de vocabulario y escritura, demostrados en actividades y tareas encomendadas y en menor medida en sus intervenciones orales.
- b) La elaboración trimestral de un proyecto o trabajo en lengua inglesa, adecuado a su nivel.
- c) El cuaderno de la asignatura (“Workbook”), que incluirá un vocabulario.
- d) Las pruebas escritas (al menos tres por evaluación), que incorporarán cuestiones en inglés.
- e) La conducta, actitud hacia el aprendizaje y el acierto de las intervenciones en público.

En las pruebas escritas, las cuestiones se formularán predominantemente en inglés. Esta idea inicial quedará supeditada a la dinámica del grupo y se modificará si su funcionamiento no es el adecuado. En ningún momento, no obstante, los contenidos demandados en inglés deben suponer una dificultad añadida. Se tiene como criterio que en inglés se utilizarán expresiones sencillas que los alumnos ya comprenden, del tipo cite, complete, nombre, ordene, explique, describa, etc.

Cuando se introduzca algún término que pueda ser desconocido por no haberse tratado en clase se les facilitará su traducción entre paréntesis. Ocasionalmente se les va a solicitar definiciones, descripciones y explicaciones cortas con frases sencillas, gramaticalmente adecuadas para su nivel de inglés y utilizadas en las clases, en las que manejen los términos específicos de las Ciencias Sociales.

Los criterios de calificación y recuperación serán los mismos que se presentan para el resto de los grupos del mismo nivel.

Programación de Matemáticas, Sección Bilingüe Inglés.

Curso 2º de ESO.

Los contenidos de Matemáticas en 2º de ESO de la Sección Bilingüe Inglés coincidirán con carácter general con los recogidos en la programación de Matemáticas.

Metodología.

Dada la densidad y complejidad de las Matemáticas, la mayoría de las explicaciones iniciales de los nuevos conceptos serán en castellano.

De las cuatro horas semanales que dispone la asignatura se impartirá un mínimo del 25% en inglés, lo que equivale a una hora. Cuya distribución semanal dependerá de las necesidades de cada unidad y de la disponibilidad del lector.

A través e las matemáticas trabajaremos speaking, reading, listening and writing.

El speaking se trabajará con el vocabulario habitual de la vida en el aula. Me hubiese gustado contar con un lector (assistant teacher) como en años anteriores. Es de gran utilidad tener en la clase a alguien nativo, tanto para trabajar el oído como la pronunciación, Pero de momento no lo tenemos, dicen que tal vez en enero, veremos

El reading se trabajará sobre textos en los que aparecerá vocabulario del tema correspondiente. Estoy incorporando textos de la colección “Murderous Maths” Y en problemas, donde se puede practicar mayor variedad de vocabulario.

El writing consistirá principalmente en la redacción de contestaciones a preguntas y las explicaciones de la resolución de problemas.

Finalmente el listening como no se trabajará con el lector, habrá que hacerlo con las TIC. Aprovecharemos la cantidad de videos disponibles en la red, que además permiten el visionado con subtítulos en inglés.

El año pasado trabajamos en alguna sesión la película “Hidden figures” en coordinación con el departamento de física. Estoy pensando este año en la posibilidad de repetir o hacerlo con “The imitation game”

Todo ello incorporando los principios del Aprendizaje Integrado de Contenidos y Lenguas Extranjeras (AICLE).

Evaluación.

Los criterios de evaluación serán los establecidos en la programación de Matemáticas para la asignatura Matemáticas en 2º.

Las competencias lingüísticas se evaluarán de manera positiva, para mejorar los resultados de la evaluación.

En los exámenes que se realicen durante el curso, se podrá incluir algún ejercicio en inglés siguiendo modelos trabajados en clase, que aportará como máximo medio punto a mayores sobre la nota final del examen.

Si alguien renuncia a trabajar en inglés (ocurrió el año pasado), se aconsejará en la evaluación final el abandono de la sección bilingüe.