

GI-Learner competencies		K7		K10		K12
1 Critically read, interpret cartographic and other visualisations in different media	interpretation	A	B	C		C
A: Be able to read maps and other visualisations	Example: use legend, scale, symbology ...					
B: Be able to interpret maps and other visualisations	Example: understand meaning, spatial pattern and context of a map					
C: Be able to critically read and interpret and be aware of sources of information and their reliability	Example: critically evaluate maps identifying attributes, representations and metadata of the maps					
2 Be aware of geographic information and its representation through GI and GIS.	learning about	A	B	C		C
A: Know that geographical (location-based) information exists	Example: know about GPS, GIS, Internet interfaces					
B: Recognise that geographical information can be represented in some ways	Example: know some different representations of information (maps, charts, tables...)					
C: Be aware that geographic information can be represented in many different ways	Example: know about a variety of GI data representations					
3 Visually communicate geographic information	produce	A		B		C
A: Transmit basic geographic information	Example: Produce basic maps or other visualizations					
B: Communicate geographic information in suitable forms	Example: Share results, find alternatives, present outcomes					
C: Be able to use GI to exchange in dialogue with others	Example: discuss outcomes like survey results/maps online or in class					
4 Describe and use examples of GI applications in daily life and in society	applying	A	B	C		C
A: Be aware of GI applications	Example: know about GPS-related/locational (social networking), Google Earth					
B: To know how to use some examples of (daily life) GI applications	Example: use an app to read the weather, environmental quality, travel planner ...					
C: Be able to know why and how GI applications are useful for society	Example: emergency services, police, precision agriculture, environmental planning, civil engineering, transport, research					
5 Use (freely available) GI interfaces	use	A	B	C		C
A: Perform simple geographical tasks with the help of a GI interface	Example: Find your house in a digital earth browser					
B: Be able to use more than one GI interface and its features	Example: Find routes from school to home and back, get a topographical map for a walk					
C: Can effectively solve problems using a wide variety of GI interfaces	Example: Find and use data from various data portals (SDI)					
6 Carry out own (primary) data capture	produce / gathering	A		B		C
A: Collect simple data	Example: gather data during fieldwork (coordinates, pictures, comments...)					
B: Be aware of what type of data is needed and select an appropriate data gathering approach, tool etc.	Example: gather sound data to analyse impacts of traffic					
C: Be aware of the issues concerning data gathering and be able to identify alternative approaches to data capture and select the most suitable	Example: agree a methodology which explains the data collection for land use change					
7 Be able to identify and evaluate (secondary) data	use / evaluate	A		B		C
A: Be able to locate and obtain data	Example: Find and download data on migration and be able to use it					
B: Understand that there is different quality in data, not everything useful	Example: Identify multiple data sources for example of population or pollution and be able to compare their level (scale), detail, frequency, accuracy and other considerations					
C: Being able to fully assess value / usefulness / quality of data	Example: Use data on climate change from ESA, ICCP compared to Facebook graphs					
8 Examine interrelationships	analyse		A	B		C
A: recognise that items may, or may not, be related (connected) in different ways to one another	Example: recognize simple relationships between things, e.g. heat and sunshine, or city size and traffic jams // inverse relationships // some things are not related					
B: explore interrelationships between a variety of factors	Example: changes in environment, influence, connections and hierarchy of ecosystems					
C: be able to recognise that there are many different relationships and that understanding the cause and effect is often not possible	Example: Evolution of ecosystem over time is complex and is related to many variables					
9 Synthesise meaning from analysis	produce			A	B	C
A: be able to identify what the analysis says	Example: there are different types of climate					
B: to combine elements from the analysis to make sense of the outcomes	Example: realise that climate is changing					
C: to assess the analysis in depth, create new meaning and make links to the bigger picture	Example: responding and suggest solutions on climate change					
10 Reflect and act with knowledge	action: decision making / applying in real world	A		B		C
A: Use geodata to assess which new road system should the local authority build	Example: Use geodata to assess which new road system should the local authority build					
B: Consider implications for individuals and society	Example: Understand there will be winners and losers for each road proposal					
C: Suggest future actions to stakeholders - including themselves	Example: Develop a campaign to persuade decision makers concerning traffic planning					
		A, simple				
		B, medium				
		C, complex				

Level of learning over the secondary school curriculum (K7-12)

Competency	K7		K10		K12
1	A	B	C	C	C
2	A	B	C	C	C
3	A		B	C	C
4	A	B	C	C	C
5	A	B	C	C	C
6	A		B	C	C
7	A		B	C	C
8		A	B	C	C
9			A	B	C
10	A		B	C	C

Competencias GI-Learner		K7 (12 años/1º de ESO)	K10 (14 -15 años/ 3º ESO)	K12 (18-19 años, final de etapa educativa)
1 Leer críticamente, interpretar la cartografía y otras formas de visualización en diferentes medios	Interpretación	A	B C	C
A: Ser capaces de leer mapas y otros tipos de visualizaciones	Example: use legend, scale, symbology ...			
B: Ser capaces de interpretar mapas y otros tipos de visualizaciones	Example: understand meaning, spatial pattern and context of a map			
C: Ser capaces de leer críticamente y de interpretar e integrar recursos de información y valorar su fiabilidad	Example: critically evaluate maps identifying attributes, representations and metadata of the maps			
2 Considerar la información geográfica y su representación a través de la Geoinformación (GI) y las Ciencias relacionadas con la GI.	Aprender acerca de	A	B C	C
A: Conocer la existencia de la información geográfica (basada en la localización)	Example: know about GPS, GIS, Internet interfaces			
B: Reconocer que la información geográfica se puede representar de formas diversas	Example: know some different representations of information (maps, charts, tables...)			
C: Ser consciente de que la información geográfica puede ser representada de diferentes maneras	Example: know about a variety of GI data representations			
3 Comunicar de forma visual la información geográfica	Producir	A	B	C
A: Transmitir información geográfica básica	Example: Produce basic maps or other visualizations			
B: Comunicar información geográfica de forma adecuada	Example: Share results, find alternatives, present outcomes			
C: Ser capaces de utilizar la geoinformación para el intercambio y el diálogo con otros. Be able to use GI to exchange in dialogue with others	Example: discuss outcomes like survey results/maps online or in class			
4 Describir y emplear ejemplos de aplicaciones de GI en la vida diaria y en la sociedad	Aplicar	A	B C	C
A: Ser conscientes de las aplicaciones de Geoinformación	Example: know about GPS-related/locational (social networking), Google Earth			
B: Saber cómo emplear algunos ejemplos de GI en la vida diaria	Example: use an app to read the weather, environmental quality, travel planner ...			
C: Ser capaces de saber por qué y cómo las aplicaciones de GI son útiles para la sociedad	Example: emergency services, police, precision agriculture, environmental planning, civil engineering, transport, research			
5 Emplear los interfaces GI que estén disponibles	Emplear	A	B C	C
A: Desarrollar tareas geográficas sencillas con la ayuda de un interface de GI	Example: Find your house in a digital earth browser			
B: Ser capaces de emplear más de una interface de GI en sus posibilidades	Example: Find routes from school to home and back, get a topographical map for a walk			
C: Ser capaz de resolver problemas de forma efectiva empleando una gran variedad de interfaces de GI	Example: Find and use data from various data portals (SDI)			
6 Llevar a cabo una captura de datos sencilla de forma autónoma	Producir/ reunir	A	B	C
A: Recolectar datos sencillos	Example: gather data during fieldwork (coordinates, pictures, comments...)			
B: Ser conscientes sobre el tipo de data que se necesita y seleccionar los datos apropiados, las herramientas, etc.	Example: gather sound data to analyse impacts of traffic			
C: Estar al tanto de las cuestiones relativas a la recopilación de datos y ser capaz de identificar enfoques alternativos para la captura de datos y seleccionar el más adecuado	Example: agree a methodology which explains the data collection for land use change			
7 Ser capaces de identificar y evaluar datos secundarios	Utilizar / evaluar	A	B	C
A: Ser capaces de localizar y obtener datos	Example: Find and download data on migration and be able to use it			
B: Entender que no todos los datos tienen la misma calidad y no todo es fiable y útil.	Example: Identify multiple data sources for example of population or pollution and be able to compare their level (scale), detail, frequency, accuracy and other considerations			
C: Ser capaces de evaluar la utilidad del valor y la calidad del dato	Example: Use data on climate change from ESA, IPCC compared to Facebook graphs			
8 Observar interrelaciones	Analizar		A B	C
A: Reconocer que items pueden o no estar relacionados o conectados de diferentes formas unos con otros.	Example: recognize simple relationships between things, e.g. heat and sunshine, or city size and traffic jams // inverse relationships // some things are not related			
B: Explorar las interrelaciones entre una variedad de factores	Example: changes in environment, influence, connections and hierarchy of ecosystems			
C: Ser capaces de reconocer que hay diferentes relaciones y que a veces no es posible entender la causa y el efecto.	Example: Evolution of ecosystem over time is complex and is related to many variables			
9 Sintetizar el significado desde el análisis	Producir		A	B C
A: Ser capaces de identificar lo que dice un análisis	Example: there are different types of climate			
B: Combinar elementos desde el análisis para hacer que los resultados tengan sentido.	Example: realise that climate is changing			
C: Evaluar el análisis en profundidad, crear nuevos significados y hacer enlaces para que la imagen sea más grande	Example: responding and suggest solutions on climate change			
10 Reflexionar y actuar con conocimiento	Actuar: tomar decisiones / aplicar los conocimientos adquiridos al mundo real	A	B	C
A: Emplear los geodatos para evaluar que nuevo sistema de carreteras pueden crear las autoridades locales.	Example: Use geodata to assess which new road system should the local authority build			
B: Considerar las implicaciones para los individuos y la sociedad	Example: Understand there will be winners and losers for each road proposal			
C: Sugerir acciones para el futuro a los agentes responsables incluídos ellos mismos	Example: Develop a campaign to persuade decision makers concerning traffic planning	A, Menor dificultad (simple)		
		B, Dificultad media		
		C, Complejo		