22nd International Geography Olympiad

13 August 2026 – Fieldwork Exercise 1

İstanbul, The Golden Horn and the Bosphorus

MARKING SCHEME

General Instructions

All students will have 2 hours and 30 minutes to complete the entire route (**Map 1**) and finish the fieldwork exercise. Before starting the route, students will be given 10 minutes to read all tasks, examine the provided materials, and plan their fieldwork strategy**.** You can explore, observe, and take notes in the area shown on the first page under the supervision of volunteer guides. However, you must submit your exam papers at the finish point after 2 hours and 30 minutes. It is strongly recommended that you review all field tasks and determine your strategy during the reading period before beginning the exercise.

Marks

The examiners will complete this table. Please leave it blank:

Question	Mark
FWE Task 1	/3
FWE Task 2	/6
FWE Task 3	/4
FWE Task 4	/3
FWE Task 5	/5
FWE Task 6	/12
FWE Task 7	/6
FWE Task 8	/9
Total for FWE 1	**/48**

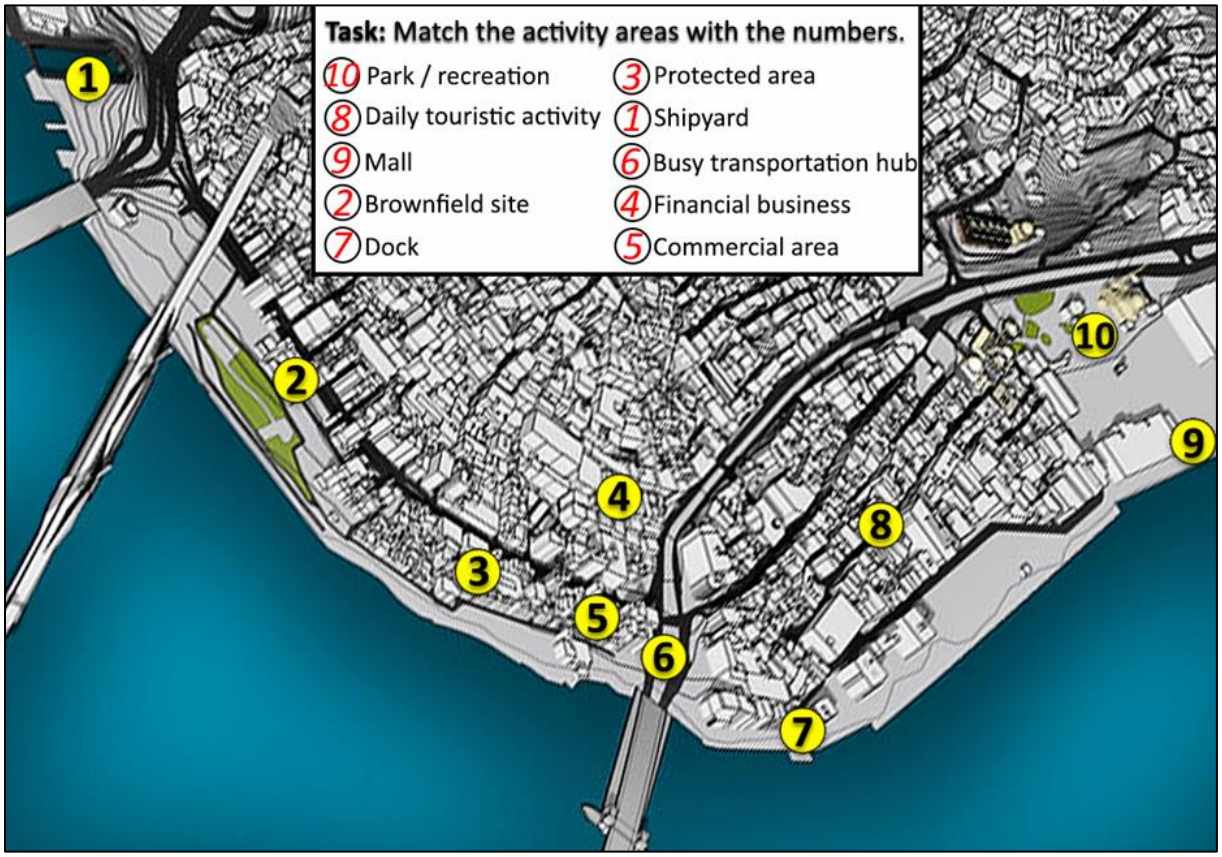
Student number

2	2				

Task 1 – Land Use

As you travel through the study area, match the ten numbered activity areas on **Map 1.1** with their land use. Write the correct location number (**1 to 10**) inside the circles found in the legend. **(3 marks)**

Note: The ten numbered activity areas are distributed throughout the entire fieldwork route. Students should observe the entire study area before completing the task.



Map 1.1. The task area some specific point

3 marks: 10–9 correct points
2 marks: 8–7 correct points
1 mark: 6–5 correct points
0 marks: 4–0 correct points

TOTAL: 3 MARKS FOR THE TASK

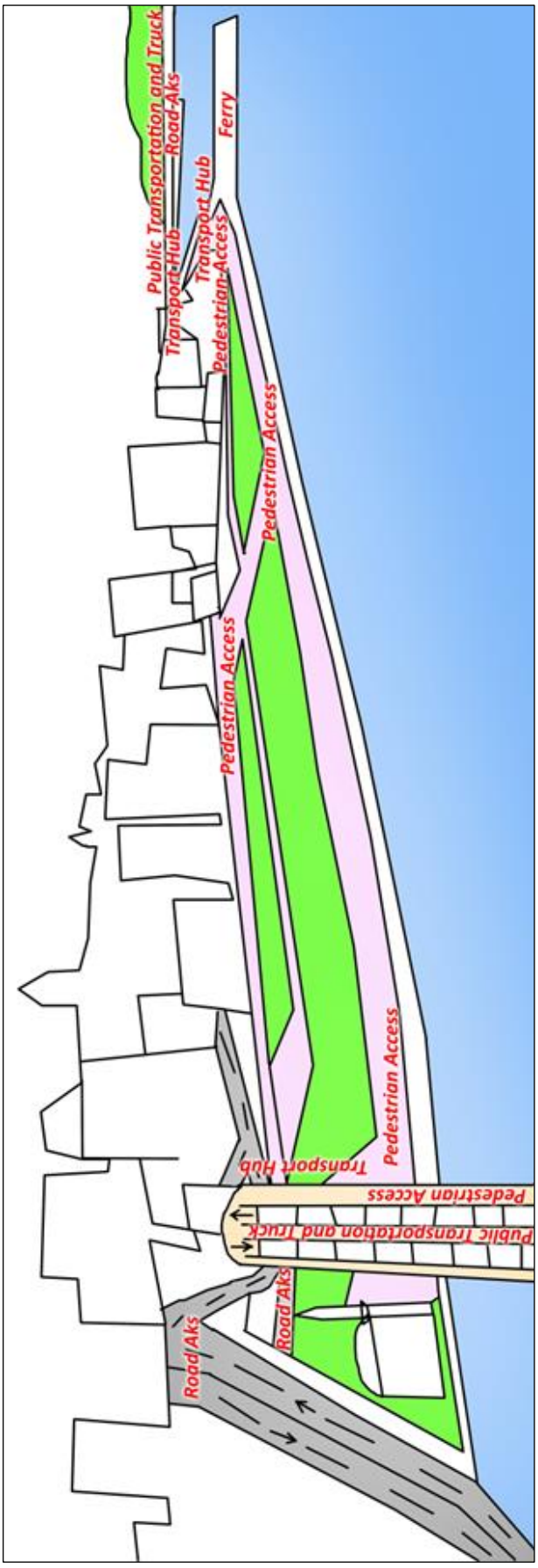
Task 2 – Field Sketching

For this task, you will draw and annotate a field sketch. Find a safe position on the wide observation platform of the Haliç Metro Bridge **(Checkpoint 1 on Map 1),** where you have a clear view of the two closest road bridges to the Bosphorus in the Golden Horn. This is the western part of your mission area and corresponds to the Golden Horn coastal belt. For this Task, you should be facing **EAST, but you should also include the bridge** as an element in your sketch.

On your field sketch, you must explicitly **draw and label** the following transportation networks **using arrows to show the direction of flow**. Use the space provided on the following page to complete this task.

- All forms of public transportation and tracks
- Maritime ferry routes
- Road infrastructure
- Pedestrian pathways and access points
- Key interchange nodes and transport hubs where different transit modes intersect

(6 marks)



Task 2. Sample sketch and annotations

MARKERS USE DISCRETION

Public transport lines and tracks labelled correctly: 1 mark

Give 1 mark if the student correctly sketches and explicitly labels at least one public line track corridor including maritime pathwith an arrow indicator (e.g., labelling the M2 Metro tracks on the bridge structure, the ground tracks of the T5 coastline tramline, or the maritime path of the Şehir Hatları/Turyol ferries). Give 0 marks if missing or left unlabelled.

Road transport infrastructure and traffic axes labelled correctly: 1 mark

Give 1 mark if the student correctly sketches and labels the motorized vehicle infrastructure lanes (e.g., the bridge decks of Galata or Atatürk bridges, the Tersane/Kemeraltı coastal highways, or specific vehicle flow direction arrows on these axes). Give 0 marks if missing.

Pedestrian transit networks and access points labelled correctly: 1 mark

Give 1 mark if the student identifies and labels pedestrian-specific infrastructure connecting the urban fabric to the coast (e.g., the dedicated pedestrian walkways on the bridges, metro station access stairs/elevators, or coastal pavement walkways). Give 0 marks if left unlabelled.

Key interchange nodes and transport hubs labelled correctly: 1 mark

Give 1 mark if the student correctly marks the geographical intersection where different transit modes meet (e.g., labelling ferry piers, the coastal bus terminals, or transit transfer plazas). Give 0 marks if missing or if the drawing is a non-geographical scribble.

Facing East direction: 1 mark

Aesthetics of the sketch: 1 mark.

TOTAL: 6 MARKS FOR THE TASK

Task 3 – Shoreline Engineering

Walk along the designated coastal section of the task area until you reach **Checkpoint 2 on Map 1. Make careful observations along the way.**

Based on your observations, identify **two** specific ways that human engineering has been used to modify the natural coastal geomorphology. For each example, explain the function or purpose of the modification. **(4 marks)**

Give 1 mark for each correct item: 2 marks for modifications + 2 marks for acceptable purpose or functions

Acceptable modifications	**Acceptable purpose or functions**
• Coastal reclamation • Pedestrian zone • Floating pier • Bicycle path • Hardening of shoreline (multiple types)	• Creating green spaces and recreational area • Enabling pedestrian movement along the coast • Enabling small vessels to embark and disembark passengers • Creating a transportation route for non-motorized vehicles • Preventing wave erosion

TOTAL: 4 MARKS FOR THE TASK

Task 4 – Urban Brownfields

An urban brownfield is an area of land that had been previously developed but has now been abandoned or left for nature to reclaim.

a) As you walk from **Checkpoint 2 to Checkpoint 3 on Map 1**, you will encounter several brownfield sites. **Discuss** their positive and negative impacts on the local area. **(2 marks)**

Give 1 mark for positive impact, 1 mark for negative impact. Both positive and negative impact must be included, if only positive/negative is mentioned 0 marks.

Acceptable positive impacts:

- Supporting the natural ecosystem
- Preventing the spread of construction
- Helping create new open spaces for the future
- Providing habitat for animals/plants

Acceptable negative impacts:

- Risk of collapse
- Visual pollution/eyesore
- Creating unusable spaces
- Dust/debris pollution
- Rats causing disease breed

b) Urban brownfield areas have adapted to form their own unique urban ecosystems. These unmanaged spaces can play a vital role in urban sustainability. **Evaluate** one way that an observed wasteland has made an ecological contribution to the area. **(1 mark)**

1 mark for ecological contribution.

Acceptable ecological contributions:

- Providing habitat for some local plants
- Providing shelter for some animals living in the urban area
- Preventing further construction and concrete development
- Providing safe nesting and breeding grounds for animals

TOTAL: 3 MARKS FOR THE TASK

Task 5 – Sources of Pollution

As you walk through the designated task area from **Checkpoint 2 to Checkpoint 3 on Map 1**, **evaluate** the spatial distribution and intensity of urban environmental pollution. Complete the chart below **identifying one specific, observable pollutant** in each category, and its source. **(5 marks)**

Give 1 mark for each correct line.

Pollution Category	Pollutant and Its Source
Solid waste	Acceptable answers include: • Plastic beverage bottles from tourist activity • Cigarette butts from cafes and pedestrian areas • Food packaging waste from takeaway businesses • Cardboard boxes from Perşembe Pazarı commercial activities • Old furniture left
Water pollution	Acceptable answers include: • Floating plastic waste from urban runoff • Oil/fuel from ferry traffic • Turbid water caused by maritime activity • Floating litter near quay walls and ferry docks • Detergent from cleaning local restaurants/shops • Chemical runoff from hardware shops • Broken sewage pipe
Air pollution	Acceptable answers include: • Vehicle exhaust emissions from congested roads • Diesel emissions from buses • Ferry engine emissions • Construction dust from redevelopment sites • Dust and particles from construction sites
Noise pollution	Acceptable answers include: • Vehicle horns • Traffic congestion noise • Ferry docking sounds and warning signals • Pedestrian crowd noise near transport interchanges • Construction site machinery • Loud music from restaurants
Visual pollution	Acceptable answers include: • Dense and uncoordinated commercial signboards • Goods displayed on sidewalks in Perşembe Pazarı • Deteriorated building facades • Overhead utility cables and infrastructure clutter • Graffitti

TOTAL: 5 MARKS FOR THE TASK

Task 6 – Barriers to Accessibility: Annotated Mapping

Fieldwork participants must thoroughly **survey the area near Checkpoint 3 on Map 1 (detailed view on Map 6.1)** to **identify and map** three (3) physical and spatial conditions that negatively impact disabled pedestrians' movement.

Using **Map 6.2**, for each barrier:

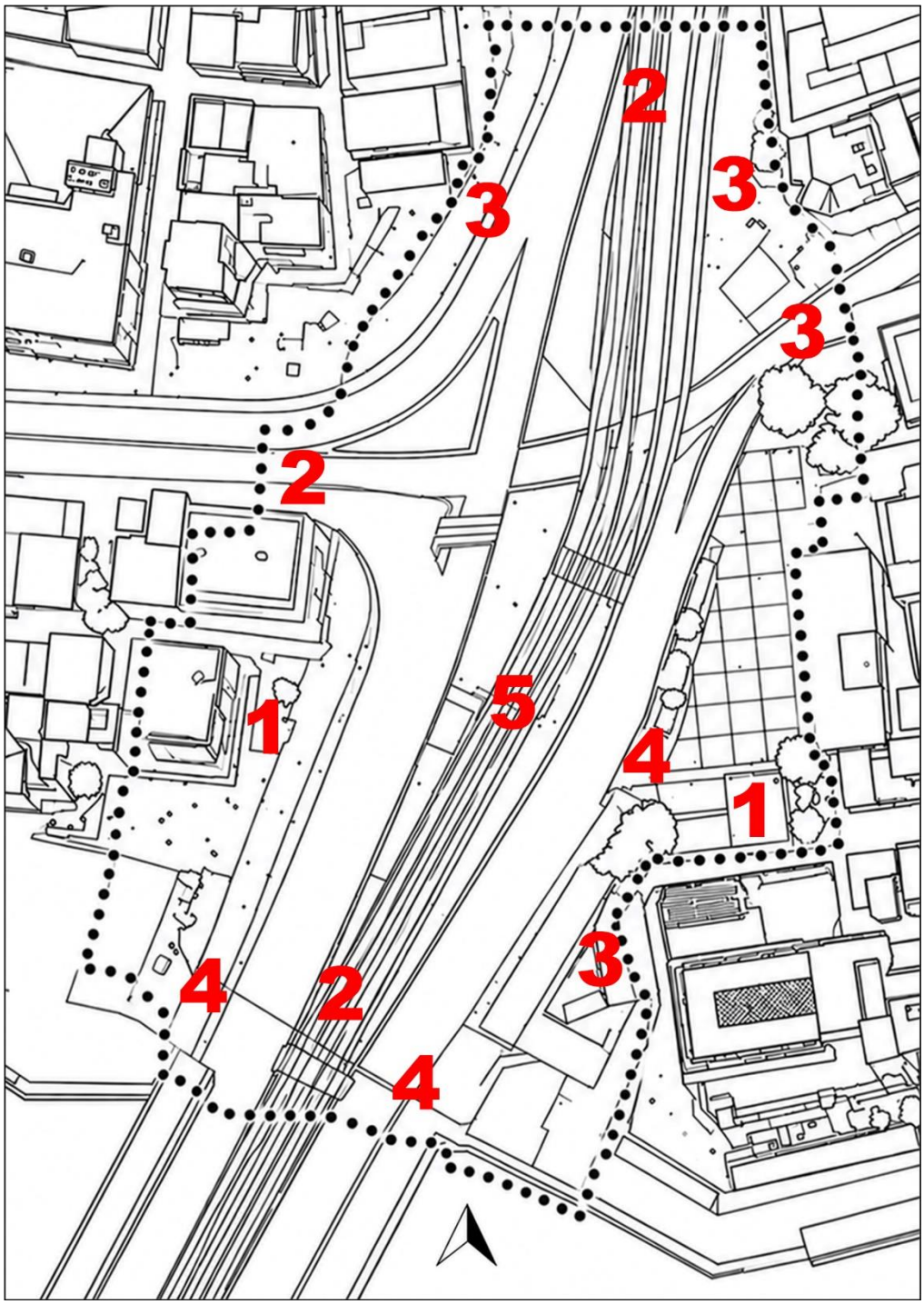
1. **Mark** the location clearly **on the map** below.
2. **Write** a brief **annotation** that:

    a) Describes the barrier.
    b) Explains how it affects pedestrian movement, safety or accessibility.
    c) Proposes one appropriate solution to overcome this problem.

(12 marks)

1 mark for each correct mark on the map, total 3 marks
1 mark for each brief annotation, total 3 marks
1 mark for each explanation, total 3 marks
1 mark for each solution, total 3 marks

1. Pedestrian crossing without a disabled ramp, disabled elevator or audio/light warning system. It is not possible for disabled individuals to use the pedestrian crossing. Wheelchair ramps or lifts should be installed, along with audible and visual warning systems.
2. The road does not allow for pedestrian crossing. Crossing is impossible. An underpass, overpass, or pedestrian crossing should be constructed to provide access.
3. A roadside without a sidewalk. A section in a high-pedestrian area that prevents pedestrian movement. A pedestrian path with illuminated and audible warnings and a textured surface is needed.
4. A bridge entrance with no warning signs. It is impossible to notice that one has entered a bridge with no exit or crossing option. Audible and visual warning systems are needed.
5. A light rail system station that does not allow access for disabled people. It is impossible for disabled people to use the light rail system. Accessible paths, ramps, and warning systems should be created to provide accessibility for disabled people.



Map 6.2

Task 7 – Tourist and Commercial Activities

Observe the structural and spatial relationships that exist between tourism-related economic activities and commercial activities developed for residents between **checkpoint 3** and **checkpoint 4**. Based on your field observations, **identify three distinct economic activities** that are directly related to **tourism**. For each activity, **describe exactly how it differs** from everyday commercial services that cater to local residents. **(6 marks)**

1 mark for each correct table cell

Tourism-Related Economic Activity	**How is it different from Local Commercial Services?**
Acceptable examples may include: • Souvenir shops • Tourist restaurants/cafés • Ice cream sales • Guided tour services • Boat/cruise services • Tourist-oriented retail stores • Currency exchange offices • Hotels/hostels • Tourist information centres • Gift shops • Cultural attraction ticket offices **1 mark** – Each activity is clearly identified and directly related to tourism. **0 marks** – Activity is not identified or is not clearly tourism-related. **Totally 3 marks**	Acceptable differences may refer to: ***Pricing*** • Higher prices than local businesses • Premium pricing aimed at visitors ***Target Consumer Group*** • Primarily serves tourists rather than residents • Focuses on short-term visitors ***Products and Services*** • Sells souvenirs or tourism-related products • Offers guided experiences rather than everyday necessities ***Spatial Layout and Design*** • Tourist-oriented displays; English menues • Outdoor seating designed for sightseeing • Locations concentrated near attractions or waterfronts ***Language and Marketing*** • Multilingual communication • International branding and advertising ***Cruise ships instead of daily commuting*** **1 mark** – A clear and accurate distinction from local commercial services is explained. **0 marks** – Difference is incorrect, unclear, or merely repeats the evidence. **Totally 3 marks**

TOTAL: 6 MARKS FOR THE TASK

Task 8 – Hydrographic Characteristics of the Bosphorus

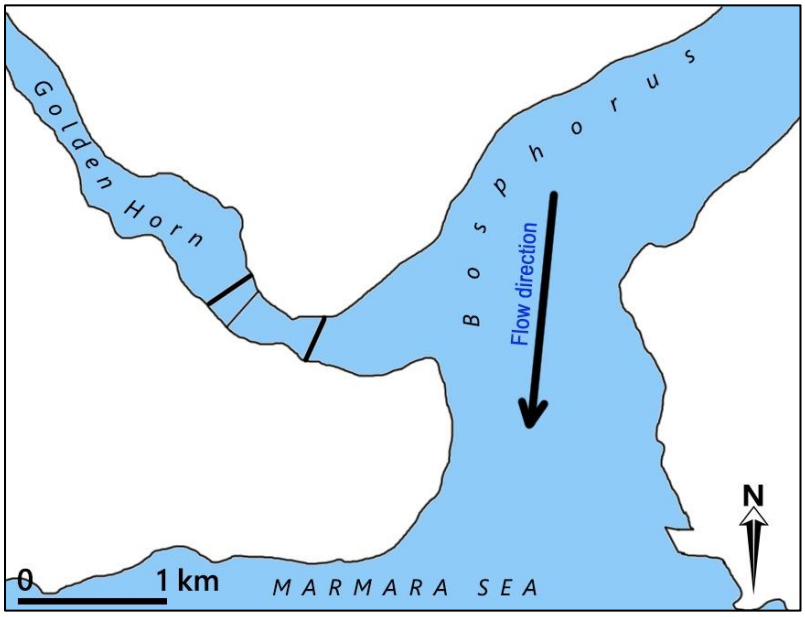
Observe the Bosphorus Strait and its dynamic current system from your vantage point: **Checkpoint 4 on Map 1**. Answer the following questions related to the hydrography and urban geography of the area in the spaces provided.

a) **Indicate** the direction of surface water flow in the Bosporus by placing an arrow on Map 8.1 below. **(1 mark)**

Direction of the Surface Current

1 mark: The student must state that the surface current flows from the **North / Northeast** (Black Sea) to the **South / Southwest** (Marmara Sea).

0 mark: Give 0 marks if the direction is reversed, incorrect, or omitted.



Map 8.1. Basemap of Golden Horn and the Bosphorus

b) **Explain** why the Bosphorus flows in this direction. **(2 marks)**

Max. 2 marks – 1 mark per valid distinct reason

Expected Answers:

- **Sea Level Difference:** The surface level of the Black Sea is higher than that of the Marmara Sea due to an abundance of river inflows and precipitation surplus, creating a physical down-slope gradient.
- **Salinity / Density Gradient:** The Black Sea has lower salinity (~18‰) compared to the highly saline Marmara Sea (~38‰), triggering a strong stratified, two-layer density flow through the strait.

c) **Analyse** how the Bosphorus current influences the social, economic and environmental development of the area. Include examples of both positive and negative impacts. **(6 marks)**

1 mark for each correct table cell

Category	Positive Impact	Negative Impact
Social	• To increase habitable/liveable environments • To increase historical depth and historical heritage	• To create attractiveness in terms of population • Causing many wars and conflicts
Economic	• To increase fish stocks • To increase touristic value • To increase geopolitical and geo-economic value	• To make navigation at sea more difficult • Increasing the cost of crossing the Bosphorus
Environmental	• To facilitate wastewater discharge • To increase air circulation	• To transfer fresh or polluted water from the Black Sea to the Marmara Sea • Causing maritime accidents

MARKERS USE DISCRETION – SOME OF THE ANSWERS PROVIDED DO NOT REFLECT THE WORDING OF THE QUESTION

TOTAL: 9 MARKS FOR THE TASK