IGEO 2015 FIELDWORK 1

Name: _____	Number: _____	Team: _____

GUIDANCE FOR FWE 1

You are now in the central part of Staritsa, an historical settlement of the Tver oblast. Staritsa will be the venue for today's field exercise. Please read the following notes carefully and follow all the instructions provided. Start by completing the header of this sheet with your personal data (given and family names, student number and team).

Today's exercise consists of four stages and you have to pass through all stages in order. For the exercise, you will work in groups of 40 participants, all from different countries. Do not attempt to change groups. Remain with your group at all times; volunteers will guide you, and you must follow all their instructions. If you have any sort of emergency, please ask for help from the volunteers. You may make additional notes in the space provided on the back of this sheet before you leave each stage.

At each stage, you will receive a task sheet to complete and instruments to use (if necessary). At each stage you have 5 minutes to complete the front sheet and read the task, and then 30 minutes for observations and completing your answer.

Please note that mobile phones, tablets or other means of communication are strictly prohibited during fieldwork. All violations of this rule will result in a penalty score. Take care at all times in the field; stay away from dangerous slopes.

PLEASE USE THE OTHER SIDE OF THIS SHEET FOR YOUR INDIVIDUAL NOTES

INDIVIDUAL NOTES

12th International Geography Olympiad

FIELDWORK EXERCISE 1

Task 1.1

Student number

1	2				

Tver 2015

TIME LIMIT 30 MINUTES. 4 MARKS MAXIMUM

Your task is to calculate the residential population density of the town block shown on the map (FIG. 1 – the area within dotted borders).

HINTS&TIPS

- To calculate density: first, walk around the area, count the number of inhabited dwellings in the area and then calculate the population on the basis that the average size of a household is 2.7.
- There are three main types of residential buildings in Staritsa (FIGS. 2-4). Some dwellings are vacant or abandoned. Do not include these.
- Some buildings are not used for housing.
- Estimate the area using the map scale

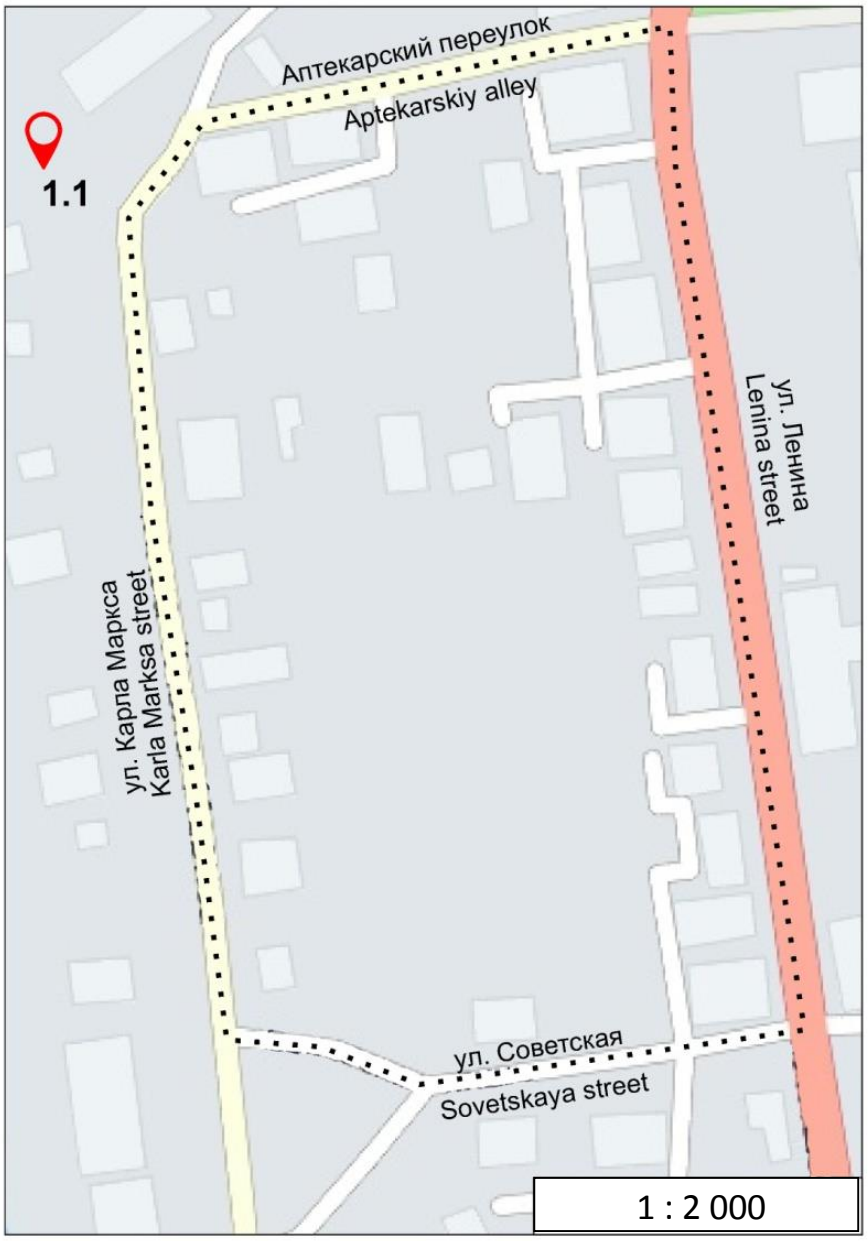

FIG.1

FIG. 2. Individual dwellings. Can be used by one household or shared between two or even three households. Some have retail or other businesses on the ground floor.

FIG. 3. Eight-flat dwelling

FIG. 4. Multi-apartment dwelling

NOTES AND CALCULATIONS (you must show working)

ANSWER

Density of population within the town block (town quarter):

= _____ inhabitants per ha

(1 ha = 0.01 km^2)

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FIELDWORK EXERCISE 1

Task 1.2

Student number

1	2				

Tver 2015

TIME LIMIT 30 MINUTES. 4 MARKS MAXIMUM

You are now just below Point B on the side of the Starchonka (Verkhnyaya Staritsa) river valley. Identify and explain the most common uses of the quarried rock that can be seen at the outcrop on the other side of the valley (west-southwest from you) by doing the following:

- using the template (1.2.1), draw a cross-section (profile) of the Starchonka river valley along the A-B line shown on the map provided in Fig.1,
- identify the rock (1.2.2) using drilling data from site A (Table.1),
- describe known uses of the rock identified in the table provided (1.2.3).

HINTS&TIPS

- To make sure you identify the correct outcrop, use your compasses.
- The vertical scale at the template 1.2.1 shows absolute height in metres.

Fig.1

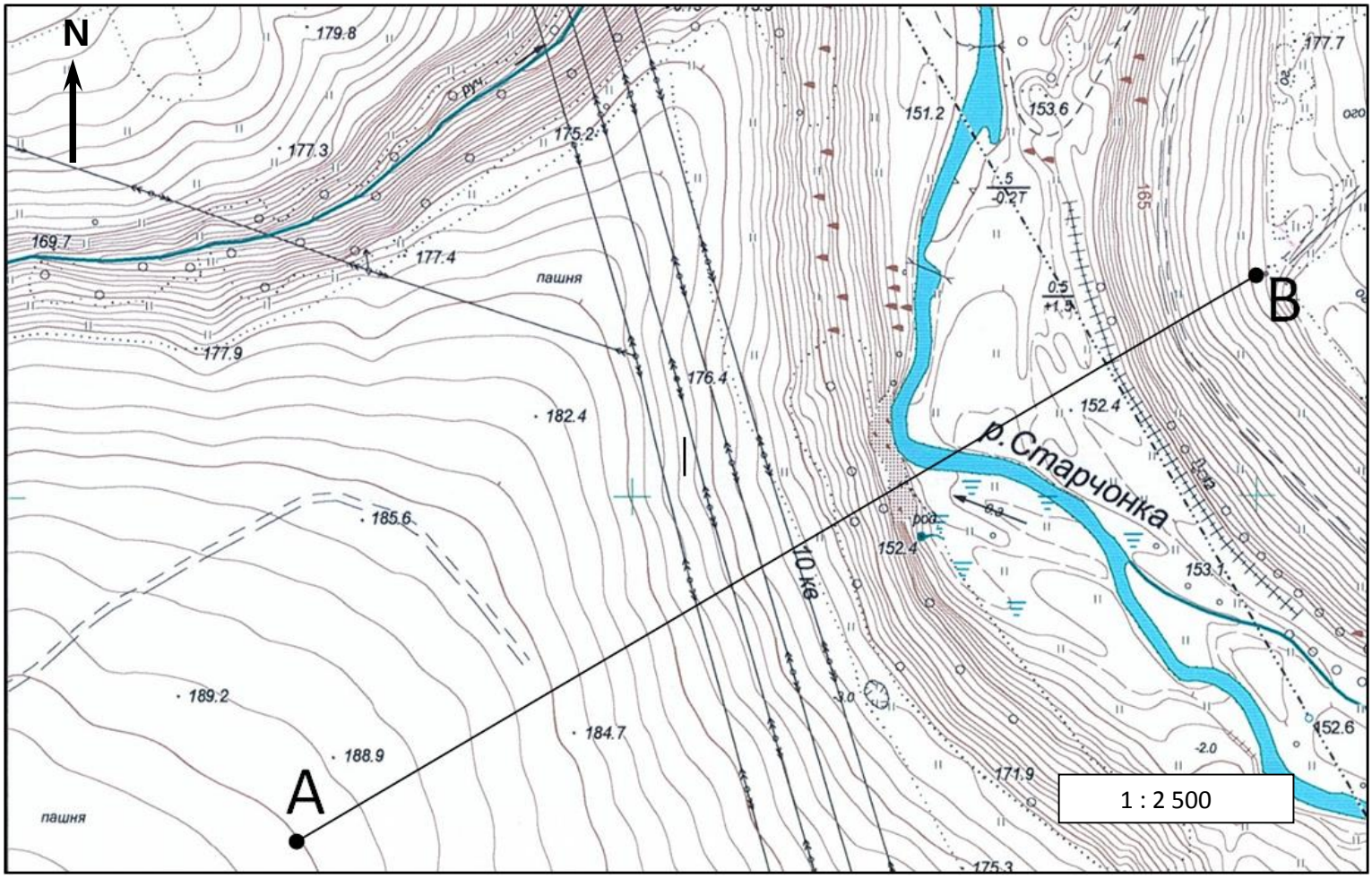
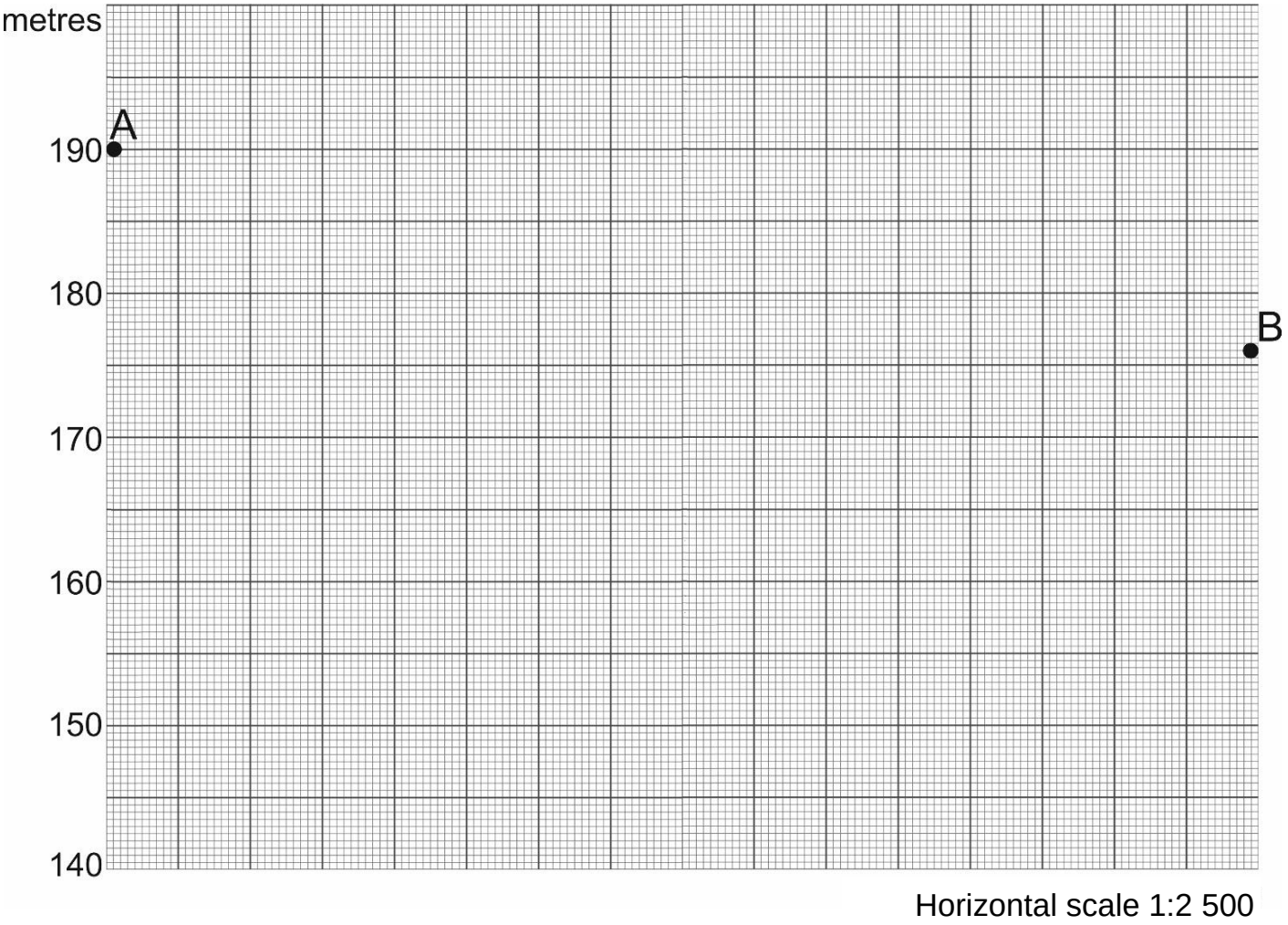


Table 1. Drilling data from site A

Layers (from surface downwards)	Layer thickness, metres
soil and humus	0.3
dark-yellow clay with inclusions of boulder and pebble	4.7
dark-brown clay with inclusions of boulder and pebble	10.0
white limestone of various hardness	52.0

1.2.1 Cross-section diagram



1.2.2. The rock observed at the outcrop _____

1.2.3. What are common uses of the identified rock? What industries use this rock? Describe how each of them uses this rock.

Industries	Use of the rock

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FIELDWORK EXERCISE 1

Task 1.3

Student number

1	2				

Tver 2015

TIME LIMIT 30 MINUTES.
4 MARKS MAXIMUM

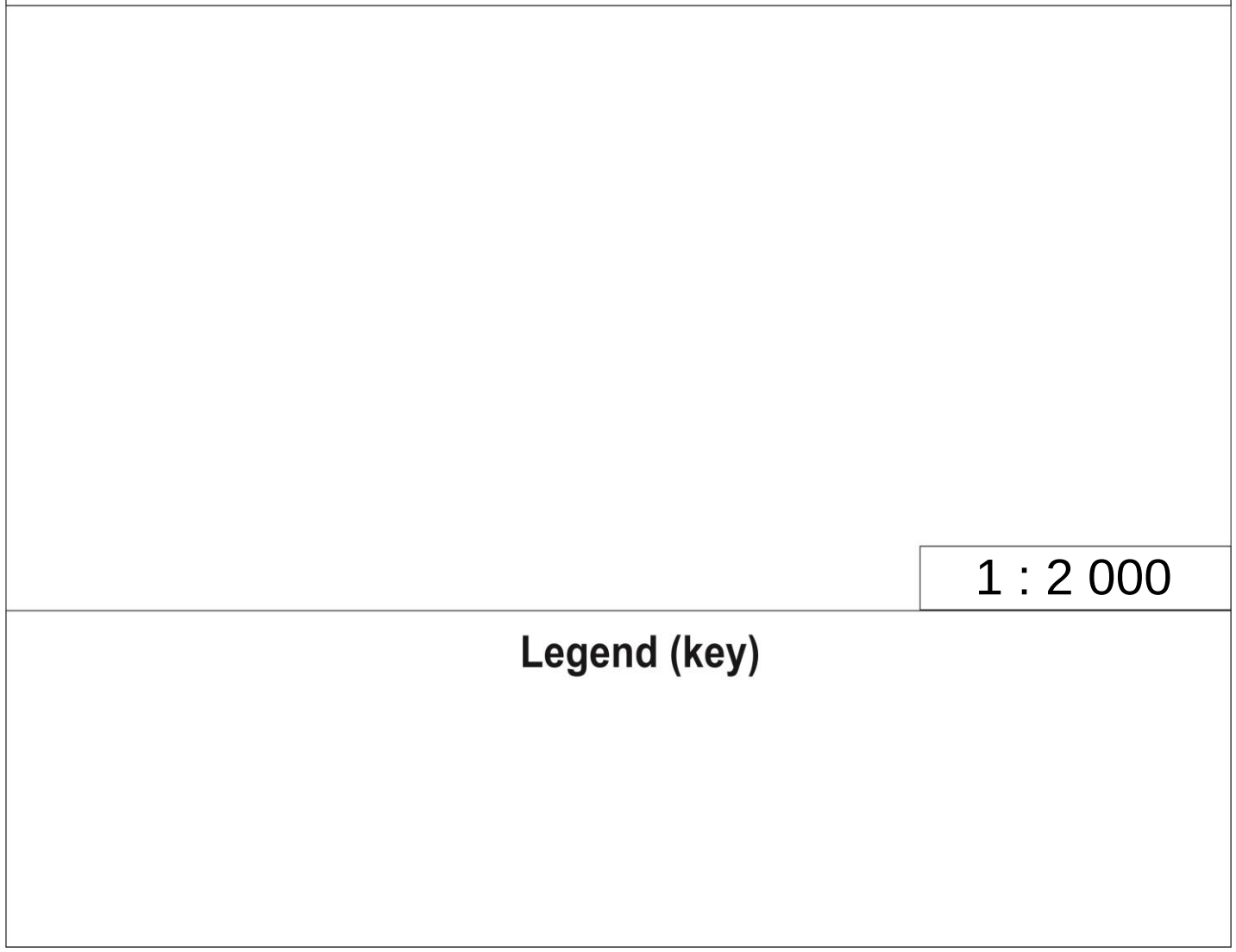
From the viewing area, observe ‘Moon Valley’ (a recently created facility providing accommodation, fishing and other recreational activities). Draw a land use map of the area highlighted on the satellite image on the right.

The map should contain general features such as paths, streams, etc. The key should contain descriptions of a minimum of six land uses identified in this part of Moon Valley.

Draw your map on the template with the title Land use in Moon Valley in 2015. The locational accuracy and size of features will be assessed, along with the use of symbols and descriptive text reported in your key.

You may use your compasses.

Land use in Moon Valley in 2015



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FIELDWORK EXERCISE 1

Task 1.4

Student number

1	2				

Tver 2015

TIME LIMIT 30 MINUTES. 4 MARKS MAXIMUM

Look at the two historic photographs (Figs. 1, 2) of Staritsa taken in the summer of 1910. The photographs were taken from near where you now stand. Compare the photographs with the present-day view, and then complete the mapping task using the instructions on the following pages.

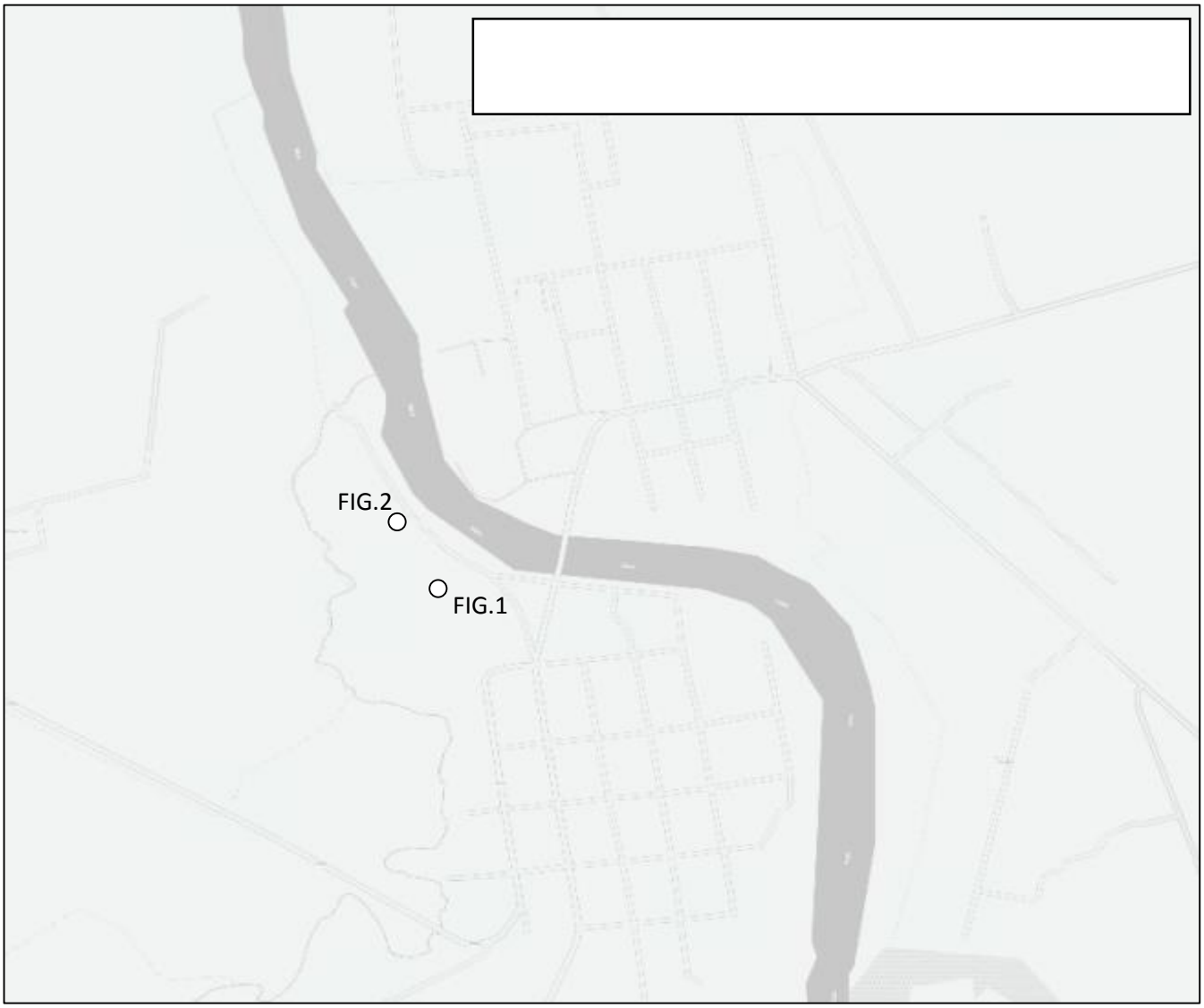
Fig.1

Fig.2

On the template below, map and label two areas of significant change in land or river use since 1910. In addition, use symbols to show locations where four features have either appeared or disappeared.

HINTS

- Using compasses if necessary, map and provide a key or legend only for the two areas of significant change and the four features.
- Provide a map title and key or legend.



LEGEND (KEY)

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FIELDWORK EXERCISE 2

Staritsa and sustainable settlement systems

(Tasks 2.1 - 2.3)

Student number

1	2				

Tver 2015

Instructions

All tasks must be completed individually, using the answer templates provided.

The Resource Book provides important supporting materials.

Time management:

- *You may have ten minutes to read the paper and Resource Book. No writing in this time.*
- *Students with English as the language of instruction then have two hours to complete the test.*
- *All other students have two hours and 20 minutes.*

Write your answers in pen.

You may use coloured pencils/pens for map work or diagrams.

You may refer to material in the Resource Book in your answers, and you may use material included in earlier answers you have provided.

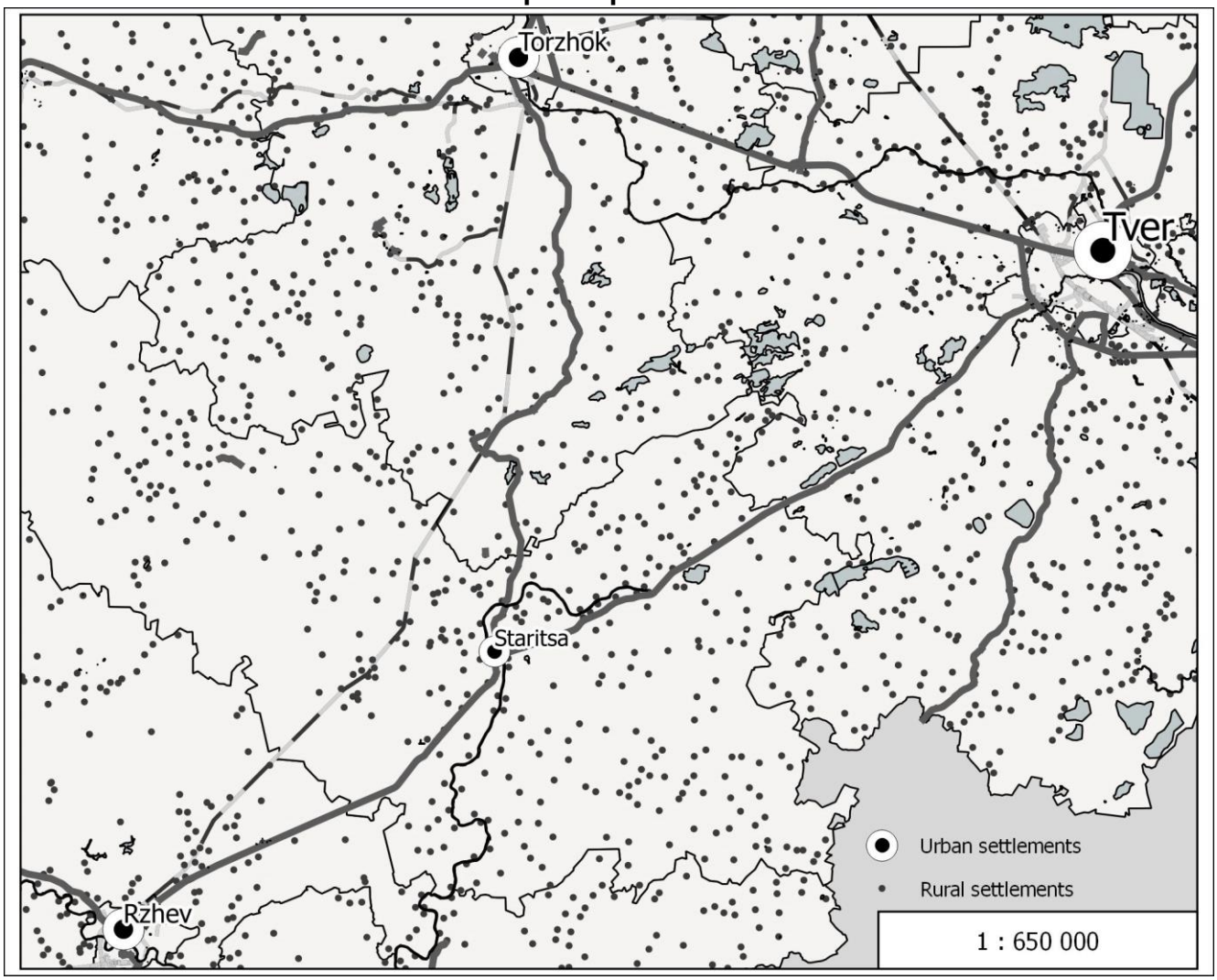
Task 2.1. Staritsa's changing zone of influence (maximum 6 marks).

In the last 150 years, Staritsa (established in 1297) has had a declining zone of influence as three other settlements in the southern Tver oblast (region) have grown much more rapidly for a variety of reasons. Rzhev and Torzhok, for example, have much better transport linkages and Tver is on major road and rail links as well as having been a regional administrative centre for several centuries.

Statistical data (page 5 in Resource Book) includes the size of the population in each of these centres at two important points in history (1867 and 2015). If population dynamics reflect the economic development of settlements in the region, we can make a map that shows the relative change in Staritsa's zone of influence.

Using Map Template 1, and the processes used in the Gravity Model (Resource Book, pages 6-7) map the change in the polygon that shows Staritsa's zone of influence between 1867 and 2015 (use contrasting line symbols with clear labels). The data you need to make the map is given in the Resource Book (page 5).

Map Template 1



The map shows changes that influence the sustainability of Staritsa.

Approximately how much did the Staritsa zone of influence change in size between 1867 and 2015? Provide a percentage estimate with a plus or minus sign as appropriate.

%

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Task 2.2. Functional zones in Staritsa (maximum 8 marks)

2.2.1 Present-day land uses

Examine the detailed map of land uses associated with each site mapped in the Staritsa area. This map was prepared in 2010 for the most recent Town Plan (page 9 of Resource Book). Compare the land uses of the two parts (right and left banks) of Staritsa. In each of the answer templates, provide three examples of common features, three features found only on the right bank, and three features found only on the left bank. Use your observations from FWE1 to and the resources provided.

Common features	
Features found only on…	
…right (North) bank	**…left (South) bank**

2.2.2 Zoning map

Zoning maps are often used in planning for sustainable development; they are the basis for making strategic decisions about parts of Staritsa that may be considered appropriate for particular activities. For example, future school or education zones can be located near recreational areas, food markets can be centrally located, and heritage zones can be protected. The map you make in this answer will help you answer Task 2.3, where you have to explain the geography behind the sustainable development initiative you propose for Staritsa.

On the Map Template 2, generalise and map the land uses into main six zones for the town's development. You may have more than one instance of a zone type on your map; for example, there could be several "residential areas", "areas zoned for industrial uses", "heritage and protected areas". You can indicate difference with overlayed symbol if this is necessary.

You may use brief map annotations if this helps to explain your zoning map. In making your map, use town blocks as your starting point. Provide a brief explanation of principles used for each zone allocation.

Map Template 2

Zone (symbol and annotation)	**Description and principles (criteria) behind allocation**

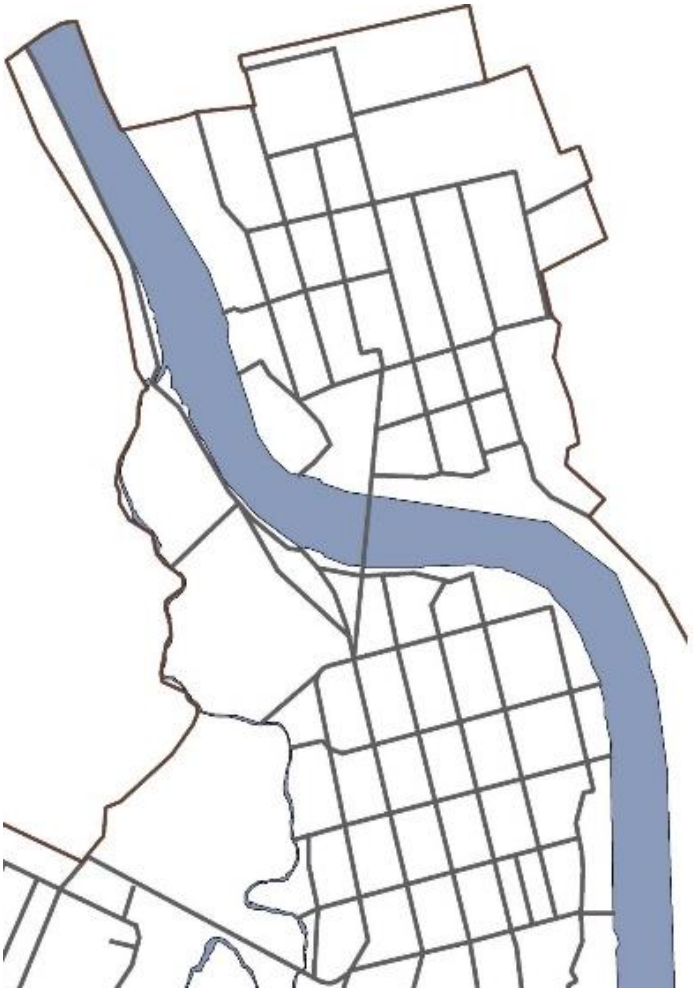
Task 2.3. Sustainable development and Staritsa (maximum 10 marks)

In the four panels provided, create a written plan for the sustainable development of Staritsa for the next 20 years. Your plan should be based on (a) reading the material in the Resource Book and (b) writing up to 125 words in response to each of the four tasks described below.

(a) Using the sustainable development model given in the Resource Book (page 3), provide a name for your sustainable development initiative. In the text box, identify and explain one economic, one environmental and one social issue that influences *your* named plan for the development of Staritsa. Some examples of environmental, social and economic issues are given in the Resource Book, and you may use these to create your own plan for tourism, housing, natural resource use, industrial or retailing development (for example).

Name of your sustainable development plan for Staritsa:

(b) Comment on the geography of your plan. Describe the spatial scale (e.g. regional: within 10km of Staritsa, settlement wide or local) and location of the sustainable development options you have in mind. Are there site-specific requirements (e.g. sites of tourism development)? For a food market, for example, some producers travel from sites of production far beyond the settlement to the centrally located market, but most of the consumers are local. You may use the Staritsa map supplied to locate your development options if you wish.



(c) Implementing *your sustainable development plan* for Staritsa will require you to identify the government (local, regional and state), companies, families, interest groups and individuals who will be involved in the sustainable development activities. For your named sustainable development initiative, who do you think would take the initiative, and what other parties would be involved? Describe those who you think would benefit most.

(d) A single development initiative may not be enough to secure the future of Staritsa, and the benefits may be limited to just one area of the settlement or sector (economic, environmental or social). Describe two examples of complementary initiatives to your plan that would have benefits in other areas of the settlement and in other sustainable development sectors.

Complementary initiative 1.

Complementary initiative 2.