

Learning Tool Code	Title
SDGfP goal 9	<b>Industry, Innovation and Infrastructure</b>
<b>Objectives</b>	
<p>After the lesson students will be able to:</p> <ul style="list-style-type: none"> <li>- understand the meaning of the term infrastructure</li> <li>- name and recognize different facilities and systems that fall under the category of infrastructure</li> <li>- familiarize themselves with the types of infrastructure currently present in their hometown</li> <li>- distinguish the pros and cons of several facilities and systems in their hometown</li> <li>- apply critical thinking to offer suggestions on how to improve their hometown infrastructure</li> <li>- draw parallels and respond positively to the targets and indicators set by the SDGfP goal 9</li> </ul>	
<b>Activity details</b>	
<p>Materials → see Annex  Duration: 180 – 225 minutes  Class size: 20 – 28 students (6th grade, age 12)</p>	
<b>Instructions</b>	
<p><b>LESSON 1</b></p> <p><b>Introduction / Engaging the students (10 – 15 mins)</b></p> <p>The teacher starts by asking questions such as <i>How do you get to school?</i> or <i>What types of buildings do you pass on your way to school?</i> in order to motivate them so they would engage in a conversation with him/her. A follow up question may include <i>Are they mostly new or old buildings?</i></p> <p>After the first round of answers the teacher moves on to mention local places of business with questions such as <i>Are there any places of business in your area?</i> and <i>What are they?</i></p> <p>The teacher then focuses on the hometown itself with questions like <i>Do you consider your town to be well-developed or not?</i> and <i>What would you change if you could?</i></p> <p>The teacher then brings the introduction to a close by administering a blank table to the students with the instructions to answer the questions and fill out the table using the Internet:</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <b>Student name:</b> </div>	

What is **reliable infrastructure**? Give some examples:

What is **sustainable industrialization**? Give some examples:

### Research (5 – 10 mins)

After the students finish writing in their answers, the teacher calls upon a couple of them to read what they have found. Other students can chime in with additional comments or a brief discussion.

Finally, the teacher introduces one of the goals of today's lesson by stating *Today you will make a presentation where you will act as a mayor of your hometown.*

### Preparation for the assignment (15 – 20 mins)

The teacher divides the students into pairs or groups of three and gives them instructions on how a quality presentation should be made (the instructions mostly include the accepted font size, the appropriate number of rows, line spacing and the position of the text and images). The teacher also gives them some examples of the titles they should use which may include:

- *Town location*
- *Industry in my town*
- *Examples of innovation in my town*
- *How climate change affects my town*
- *Mobile network coverage*
- *What my town still needs*

The teacher lets them know their presentation should include a quiz at the end and that the best pair or group will present their work to the rest of the class two weeks after. After this the students may begin their work.

### Pair / group work (45 mins)

The students use prior knowledge to come up with the ideas and build their presentation. The teacher in the meantime shifts from group to group and gives advice on how to approach a certain topic the students chose or to help build a certain slide. The teacher takes note of the time and 5 minutes before the lesson ends reminds them to save their work so they can continue the week after.

## **LESSON 2**

### **Introduction** (5 – 10 mins)

The teacher asks the students if they remember the most important topics from the week before and reminds them what they are doing and why.

The teacher then checks the pairs / groups from the previous week and lets them return to their saved work and continue with the presentation.

### **Pair / group work** (35 mins)

The teacher again shifts from group to group and gives advice on how to fine tune the slides and put the finishing touches on the presentation.

### **Instructions on creating the quiz** (5 – 10 mins)

The teacher asks the students if they remember how to build an interactive quiz inside a presentation and reminds them of the structure and how the slides should be arranged. The teacher also shows the students how the correct and wrong answers are linked with the corresponding slides.

### **Pair / group work** (30 mins)

The students use prior knowledge to design the appropriate questions and the slides used for giving feedback. The teacher in the meantime shifts from group to group and gives advice on how to formulate certain questions and check if the slides are linked correctly.

### **Conclusion** (5 mins)

The teacher takes note of the time and 5 minutes before the lesson ends reminds everyone to save their work and also determines which pair / group is the best. The pair / group in question is given additional instructions on how to deliver the presentation the week after.

## **LESSON 3**

### **Introduction** (5 – 10 mins)

The teacher asks the students if they remember the most important topics from the previous two weeks and reminds them that their colleagues have prepared a

presentation for them. He/she instructs them to actively listen and jot down any potential question they might have.

### **Pair / group presentation** (20 – 25 mins)

The best pair / group present their work to the rest of the class. They use the quiz at the end of a presentation as a fun way to check if their colleagues have been paying attention.

### **Conclusion** (10 mins)

The teacher asks several students from the rest of the class to read their questions for the group. He/she also asks them to comment on the presentation and the quiz, thanks the best pair /group and reminds everyone of the most important topics they have learned in the previous three weeks.

## **Tips for the facilitator**

The students should have prior knowledge of building a quality presentation, designing their own master slide theme and linking appropriate slides for the quiz portion of the presentation.

See Annex for further details.

## **Debriefing**

The teacher can check how much the students remember about the topic by creating a questionnaire based on the presentation they watched. The activity can be planned for the week after the presentation, but it is completely optional.

## **Follow-up/Inspiration for the future**

The students can use the knowledge acquired from the previous three lessons to create a poster or an infographic for their Art class.

## **References/Further reading**

<https://www.un.org/sustainabledevelopment/infrastructure-industrialization/>

<https://unstats.un.org/sdgs/report/2019/goal-09/>

<https://sdgs.un.org/goals/goal9>

<https://en.unesco.org/sites/default/files/resources-sdg9.pdf>

## **Annex**

Additional documents included with the lesson plan:

- Quality Presentation Reminder

## QUALITY PRESENTATION REMINDER

A presentation should be clear and concise, so ask yourself the following while building a slide:

- 1) **Is the font size between 24 and 28?**
  - if not, adjust it; enlarge the text if it's too small and vice versa
- 2) **Do you have between 4 and 6 rows of text?**
  - only the most important notes go on the slide; remove all non-essential lines
  - be careful: three rows or less is way too little text
- 3) **Does your slide contain images?**
  - each slide should contain between 1 and 4 images
  - be careful: images should not cover text or be too large
- 4) **Do you have any empty space on the slide?**
  - Increase line spacing to 1.5 or 2.0 and use larger text frames
  - do not use a larger font instead because the slide could become cluttered
- 5) **Did you use animations in your presentation?**
  - text is more important than images so it should appear first
  - images come with the text or after it; do not use slides with images only
  - animated images should not obstruct the text
- 6) **Do you use different slides in your presentation?**
  - the presentation will quickly become boring if you use the same slides all the time, you can change the layout of the slides so your presentation stays fresh and interesting

## USUAL SLIDE LAYOUTS

We have many different ways of designing slide layouts, but they mostly concern the position of the text and images on the slide. For example, we can put the text below or above the images:



We can also position the text to the left or right of the images:



We can also use slides with two different text frames:



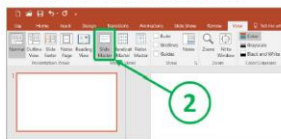
## Using Slide Master

### HOW TO USE SLIDE MASTER TO ADD YOUR OWN BACKGROUND

Create a new presentation and click on the **VIEW (1)** tab.

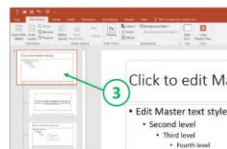


Under the **VIEW** tab click the **SLIDE MASTER (2)** button.



**BECAREFUL:** we do not use the Slide Master to create the presentation itself. We only use it to set the background and adjust the text frames.

Click the slide on the very top of the slide panel (3). The slide in question is bigger than all the other slides.



Copy and paste the image you want to use. The parts outside of the slide frame will not appear on the slide itself. Right-click the image and choose the **SEND TO BACK (4)** option to set the image as the default background.



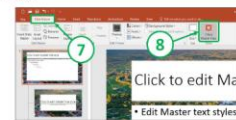
We just have to set the background color of the text frames and we're done. Click on a text frame and choose the **FORMAT (5)** tab.



Under the **FORMAT** tab click the **SHAPE FILL (6)** button and choose the color you want to use. Repeat steps (5) and (6) for other text frames.



Click on the **SLIDE MASTER (7)** tab and choose the **CLOSE MASTER VIEW (8)** button.



The background is all set! You may begin with building your presentation.

## Creating a Quiz

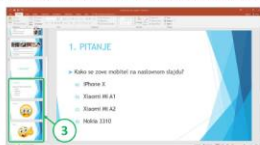
## HOW TO CREATE A QUIZ

Create a new presentation and build a couple of slide with the topic of your choosing (1). Add a new title slide at the end (2).



You need three slides with the following titles for each question (3):  
**QUESTION → WRONG → CORRECT.**

Be sure to use the titles, that way it will be easier to link the slides later.



Why this particular order? The **WRONG** slide will return you to the question, while the **CORRECT** slide will allow you to proceed.

We need to link the **WRONG** and **CORRECT** answers with the corresponding slides. Select one of the answers (4), click the **INSERT** (5) tab and use the **HYPERLINK** (6) button:



When a pop-up window appears click the **PLACE IN THIS DOCUMENT** (7) button, choose the slide you want to link it with (8) and click **OK** (9).



Repeat steps (4) to (9) for all the other answers.

We need to add an action button to the **WRONG** slide so the participants could return to the question. Click the **INSERT** tab and choose the **SHAPES** (10) button. Select the **BACK OR PREVIOUS** (11) action button in the bottom row:



Place the action button on the slide and click **OK** (12) in the pop-up menu:



And that's it! You can add a **THANK YOU FOR PLAYING** slide as the last one.

- If I were the mayor... (example presentation)

## If I were the mayor of Karlovac...

[student name, class]

## Location of Karlovac

- Karlovac is located in central Croatia between the Croatian lowlands, Croatian highlands, Pokupje and Kordun
- It is framed by four rivers - Kupa, Korana, Dobra and Mrežnica
- It is only 50 kilometres away from Slovenia and from Bosnia and Herzegovina and as such has an important traffic and economic significance



## Karlovac industry

- the economy of Karlovac mainly relies on a handful of privately owned companies such as:
  - **HS Produkt** (gun industry)
  - **PPK** (meat industry)
  - **Heineken** (beer industry)
  - **General Electric** (machining industry)



## Innovators in Karlovac

- fortunately, Karlovac does not suffer from a lack of young people with vision, the most famous one being **Albert Gajlak**, the owner of the CircuitMess startup
- some of his most successful inventions include the MAKEBulino gaming console and the Batmobile riding car for kids

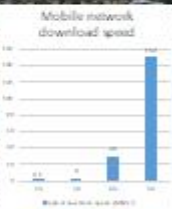



## The effects of climate change in Karlovac

- since Karlovac is situated near four different rivers, the biggest threat to the city itself are occasional **floods**
- It is imperative that we build river defenses such as **embankments** along the most endangered areas of Mrežnica and Korana rivers



## 5G mobile network in Karlovac



- Croatian ISPs are well on their way to building a robust 5G mobile network
- the latest generation allows an easier access to the internet, a greater number of connected devices and a more reliable communication with very little latency

### What Karlovac still needs

• even though almost every major mode of transportation runs through Karlovac, there is still room for improvement



• more frequent bus and train lines are needed, especially ones connecting rural areas with the city center

### Quiz time!

(hopefully, you've been paying attention)

WRONG!

I'm sorry, that's incorrect. Go back and try a different answer!



### Question #1

• Where is Karlovac located:

- a) [Central Croatia](#)
- b) [Dalmatia](#)
- c) [Istria](#)
- d) [Slavonia](#)

CORRECT!

You have answered correctly! Well done!

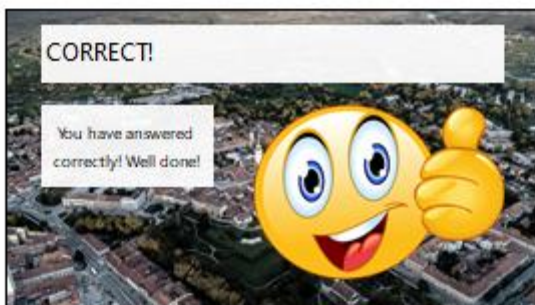


### Question #2

• Odd man out! Which of these companies is NOT located in Karlovac?

- a) [General Electric](#)
- b) [Holmelten](#)
- c) [HS Produkt](#)
- d) [PPK](#)
- e) [Bimac Automobili](#)





CORRECT!

You have answered correctly! Well done!



Question #6

• What type of transport could Karlovac use more of?



CORRECT!

You have answered correctly! Well done!



You're all done!

Congratulations!

Sources

- [www.karlovac.hr](http://www.karlovac.hr)
- [www.tportal.hr](http://www.tportal.hr)
- [www.glasistre.hr](http://www.glasistre.hr)
- [www.hakom.hr](http://www.hakom.hr)
- [www.kenstechtips.com](http://www.kenstechtips.com)