

Lower Key Stage 2 - Session 8

Assessment session – Applying your coding knowledge to create a game challenge for a partner



Objectives

- Create a challenge that reflects the programming concepts they have learnt
- Apply their understanding of **repetition**, **selection**, writing code in Python to solve their partner's challenge
- Evaluate their partner's game
- Reflect on and assess their own learning

Resources

- Interactive White Board (IWB)
- Create mode in Rapid Router (children will need accounts to be able to save their work)
- Resource sheets UKS2-S8-1 and UKS2-S8-2
- Self Assessment Sheet UKS2-SA

Vocabulary

- Repetition
- Selection
- Variables
- Create
- Design
- Evaluate
- Check
- Debug

Preparation

Pair the children by ability so they are best able to tackle each other's challenges.

Let's get started

Note that you will probably spread this session over at least two lessons. Depending on the skills your class has learnt, some will create a Python only challenge, others may create a challenge where the player has a choice of Blockly and Python.

Explain that the children are going to use the Create mode to:

- Make their own route challenge for a partner involving characters, objects and creating a background.
- Choose a start and end point.
- Choose a character (robot, van, boy, girl, wolf or monster)
- Design a layout with route tiles (road, path), background tiles (trees, grass, pond, snow), variable objects – traffic lights
- Choose whether it has to be solved only in Python. *[fig S8.1]*

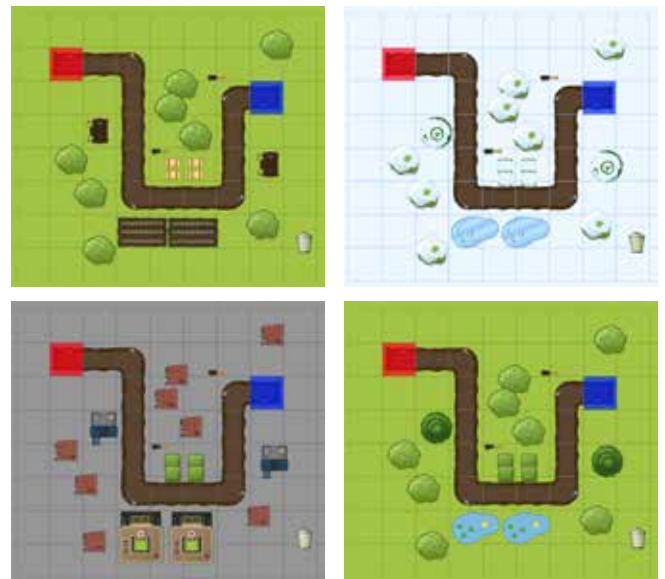


fig S81.1

Show the **create** mode on the IWB, and demonstrate how to create a road, select objects, and fix start and end points. *[fig S8.2]*



Discuss what would make a good challenge and draw up a simple evaluation sheet to evaluate each other's challenge. To start the children off Resource Sheet UKS2-S8-1 is an example of an evaluation sheet. *[fig S8.3]*

Show the class how to select Blockly and/or Python in the Create mode

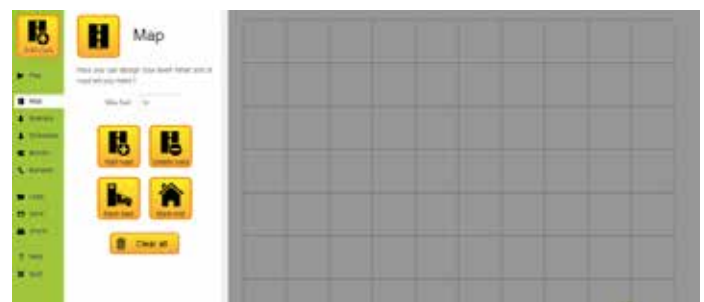


fig S81.2

What will make the challenge interesting for your partner?

How would you create a route which would need your partner to use a **repeat loop?**

How would you create a route where your partner would need to define a **procedure and **call** it in different places?**

[code] for { life }		UKS2-S8-1
Home: <input type="text"/> Class: <input type="text"/>		
Evaluate your partner's challenge		
Evaluation criteria	Yes/no	Comment
Is the task fun and appealing?		
Is the route challenging?		
Could you use a repeat loop to solve it?		
Are traffic lights included?		
Do you have to write code in Python?		
Do you have to use a for ...in range loop?		
Do you have to use a while loop?		
Could you use if and else ?		
Do you need to define and call a procedure ?		
Do you have to create your own extension in Python?		

fig S81.3

Individual activity

Ask the children to plan their challenge on the Resource Sheet UKS2-S8-2. *[fig S8.4]*

They will need to create the route and the background and save this to their Rapid Router account, using a filename they will remember.

Explain to the children that they need to work out the algorithm needed to complete the challenge, and then test out the code to do this.

[code] for {life} UKS2-S8-2

Name:

Class:

The task:

The code that my partner will need to use:

Checklist:

Will you design your route with:

- Repeat loops?
- Traffic lights?
- Sprawl?

Will your partner be able to use:

- Blocks and Python?
- Python only?

What code in Python will they need to use:

```
import random
number = random.randint(1, 10)
guess = 0
while guess != number:
    guess = int(input("Guess a number: "))
    if guess < number:
        print("Too low")
    elif guess > number:
        print("Too high")
    else:
        print("Correct")
```

fig S81.4

Class review

Recap on the class evaluation sheet you have prepared, and explain that they are going to try each other's challenge and then evaluate it. Explain how to access the saved challenges and find your partner's created game.

Practical activity

Try out their partners challenge and complete the challenge evaluation sheet .

Discuss their solution with their partner and compare it with that partner's prepared solution.

Share and review

Ask one pair to tell the group about their challenges, and to evaluate them.

What did you enjoy about the challenge?

Can you explain what you liked best?

Could there be other code solutions to the challenge?

What coding skills have you used in Blockly?

What coding skills have you used in Python?

What parts of your program did you need to debug?

Assessment

Give the children time to evaluate what they have learnt and complete the Self-Assessment sheet, UKS2-SA, which you will find in the teaching pack materials on the portal. [fig S8.5]



The image shows a self-assessment sheet titled 'UKS2-SA' with the logo '[code] for { life }' and 'Rapid Router'. It includes fields for 'Name:' and 'Class:'. Below is a 'Learning intention' section stating 'I am learning to use code in Python, using repeat loops, procedures and variables.' The main part of the sheet is a table with two columns: 'Success criteria' and 'How did I do?'. The table contains 14 rows of criteria related to Python programming concepts like procedures, loops, variables, and indentation.

Success criteria	How did I do?
I can define and call a procedure in Blockly	
I can use a repeat loop inside a procedure in Blockly	
I can understand the movement commands in Python, when I write them in Blockly.	
I can write code in Python for simple movements without Blockly	
I can explain how to use a while statement in Python	
I can explain and use if...elif...else in Python	
I can use indents and colons in my Python code	
I can explain how the repeat loop works in Python (for count in range (n))	
I can write Python code to make the computer do something depending on the value of a variable such as the colour of traffic light and use the wait command	
I can define and call a procedure in Python	
I can use and explain what a variable in a Python program means	
I can increment my variables in Python	
I can use comments to explain my strategies in Python.	

UKS2-SA - Self-Assessment Sheet www.codeforlife.education | 9

fig S81.5