Use the Program

Run the program as many times as you want. Now look at the code.

Work with a partner to answer these questions.

1. How many times in the main program (*starts when space key is pressed*) is the `square` procedure used?

2. When the square procedure is run. How many times will it move 30 forward?

3. How many times in the main program is the `eqi_triangle` procedure used?

4. What shapes do the two procedures draw?

5. Which shape would have the longest perimeter?

6. If we removed the loop from the `square` procedure what would the `square` procedure draw?

Mark the use the program questions using the answer sheet
Modify

What happens when you remove the two pen up blocks from the procedures?

What would you change to increase the distances between the squares?

What would you change to make all the squares larger?

What would you change to make all the triangles smaller?

What would you change to make the square only draw three sides?

Mark the modify questions using the answer sheet.
Complete task 1 and then choose one or more options to do

Task 1

Use the shape information below to make other regular 2d shape procedures like a pentagon and a hexagon. Create a main program that uses these procedures to draw a pattern.

Now choose one or more options from below

Option 1
Create your own repeating pattern using more than one procedure and a main program to run them. Make sure there are no gaps in the pattern or shapes drawing lined in exactly the same place as previous lines. Overlapping shapes where the lines cross are fine.

Option 2
Can you create squared or triangular paper using the smallest number of main program commands? (You can use as many procedures as you like)

Option 3
Can you fill the screen with randomly drawn shapes using procedure run by a main program?

Option 4
Is there something you would like to create that uses these or similar shape procedures run by a main program that is not listed here. Describe it to your teacher.
Exploring Basic Procedure Answers

**USE MODIFY CREATE**

**Use the program answers**

1. How many times in the main program is the square procedure used? **Twice** (1 mark)

2. When the square procedure is run. How many times will it move 30 forward? **4 times** (1 mark)

3. How many times in the main program is the eqi_triangle procedure used? **5 times** (1 mark)

4. What shapes do the two procedures draw?
   - Triangle (equilateral triangle) & square (2 marks one for each shape)

5. Which shape would have the longest perimeter?
   - Triangle $50 \times 3 = 150$ Square $30 \times 40 = 120$ Triangle has longest perimeter (1 mark)

6. If we removed the loop from the square procedure what would it draw? **Line 30 steps long** (1 mark)

**Modify Answers**

- What happens when you remove the two pen up blocks from the procedures? **Continues to draw lines between shapes** (1 mark)

- What would you change to increase the distances between the squares?
  - **Change move 60 block to larger or smaller number** (1 mark)

- What would you change to make all the squares larger?
  - **Increase steps in move 30 block in the square procedure** (1 mark)

- What would you change to make all the triangles smaller?
  - **Decrease steps in move 50 block in the eqi-triangle procedure** (1 mark)

- What would you change to make the square only draw three sides?
  - **Repeat 3 instead of 4 in square procedure** (1 mark)