



Orange Shell Challenge Cards

Teachers Notes:

This set of Challenge cards is designed to be used with the Blockly Turtle resources. The full collection of resources for teachers is found in the **Turtle** area on bebras.uk.

This set of cards is for pupils who have achieved their Orange Shell Programmer award and are now working towards their Green Shell Programmer award.

Preparation:

1. When the pupils login to their computers they should head to the ***Turtle Playground - Orange***. They should be directed to: bebras.uk -> Turtle -> click on the Orange turtle.
2. These cards should be printed out (size to:100% on A4 card, or “fill the paper” on A5 card) and laminated. Each pupil also needs their own Yellow Shell Record Card (which should not be laminated as they have to be written on). When a pupil completes a Challenge Card, its number can be written in their Record Card (in one of the clip boards).
3. In the first lesson, the teacher should show the students how to access ***Turtle Playground - Orange*** and the Introduction video as instructed on Card 0. Note ***Card 0*** is for the teacher to use with the class. Pupils can start with ***Card 1***.
4. Students should complete a minimum of 8 cards so some choice is available. Don't forget to encourage students to do at least three of their own ideas. They should also mark these in their Record Card.



Orange Shell Challenge Cards

Code Blocks introduced in Turtle Playground - Orange:

Turtle is a

repeat times
do

For pupils working towards their Green Shell Turtle Programmer award
using Turtle Playground - Orange



This Card is for teachers!

Orange Shell Challenge Cards

0

1. Show your pupils how to go to ***Turtle Playground - Orange***

Turtle Playground - Orange

Save image

Save program

Get saved program

Turtle

Colour

Loops

Run

Next step

Reset

Videos: [Introduction](#)

Turtle Maze Puzzle: [Loops](#)

Orange Turtle Quiz: [Quiz](#)

2. Show your class the Introduction video (linked at the bottom left of the Playground).
3. Provide pupils who are ready with an Orange Shell Record Card
4. Distribute the pupil's Challenge Cards.

For the teacher of pupils working towards their Green Shell Turtle Programmer award using Turtle Playground - Orange

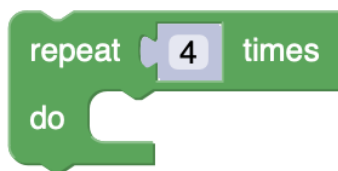
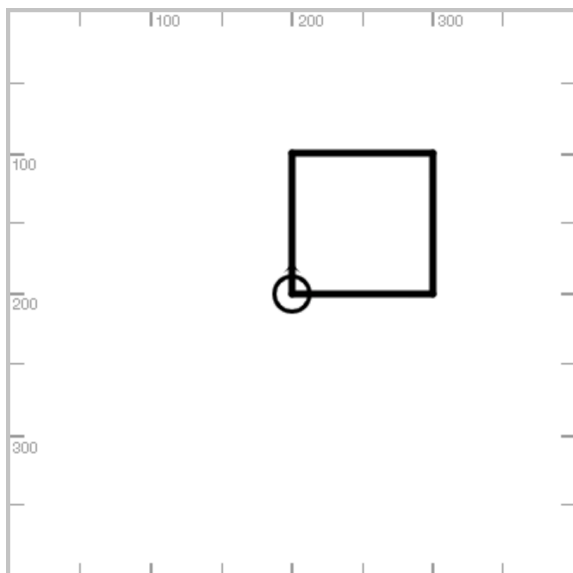


Orange Shell Challenge Cards

1

Challenge:

Draw a square using only the **code blocks** shown below.



Extra:

You can change the turtle back to a turtle with this **code block**:



and change its colour with these two **code blocks**:



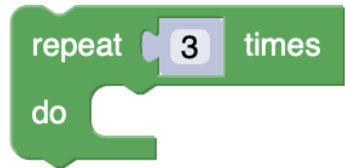
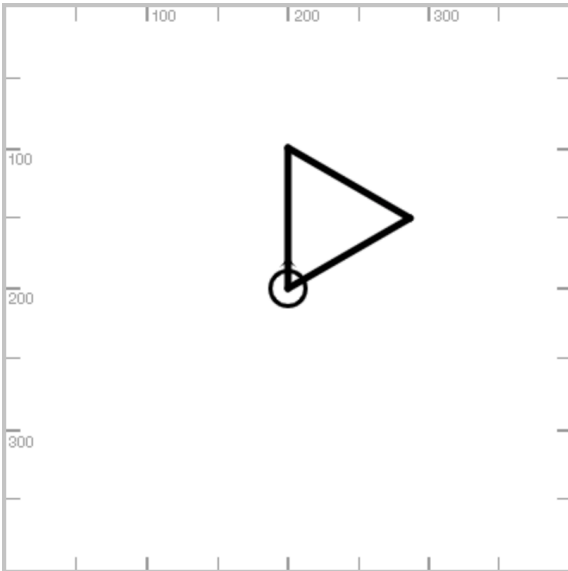


Orange Shell Challenge Cards

2

Challenge:

Draw a triangle using only the **code blocks** shown below.



Extra:

Can you make the triangle point in different directions?

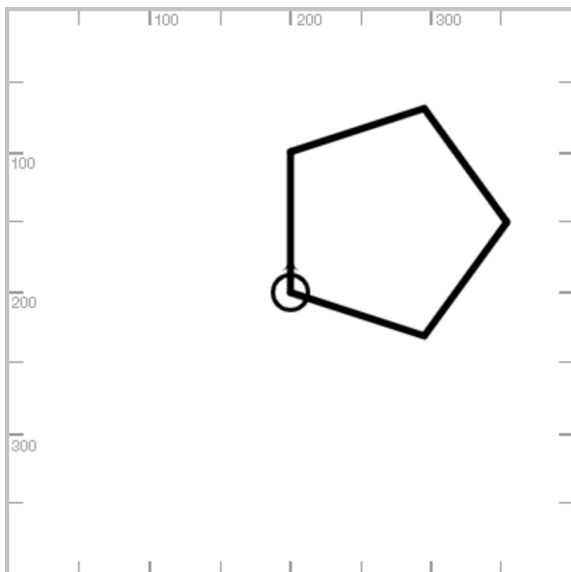


Orange Shell Challenge Cards

3

Challenge:

Draw a pentagon using only the **code blocks** shown below.



repeat 5 times
do

Turn right 72

Move forward 100

Extra:

Can you add a second pentagon on the left?

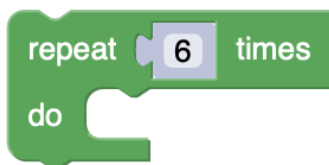
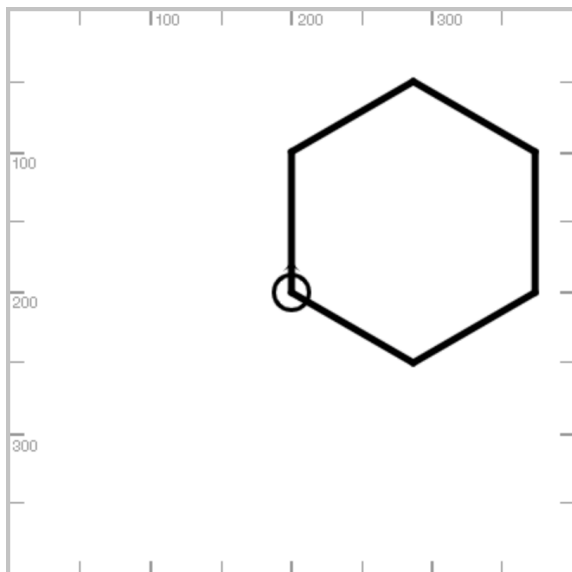


Orange Shell Challenge Cards

4

Challenge:

Draw a hexagon using only the **code blocks** shown below.



Extra:

Can you add a second hexagon on the left and then fit a third one below?



Orange Shell Challenge Cards

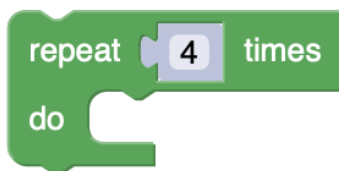
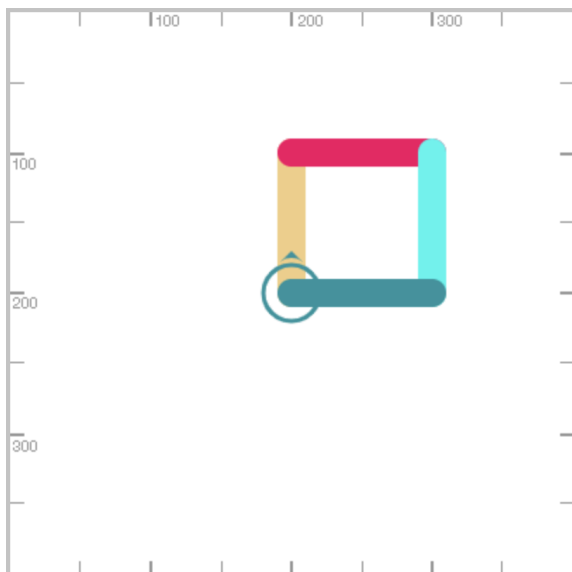
5

Challenge:

Draw a colourful square.

Your **program** must use the **code blocks** shown below but it will also need some other **code blocks** to make it work.

Your square does not need to be identical to this one.



Extra:

This might be a good time to make one of your own projects for your Grade Card using the *random colour* block.

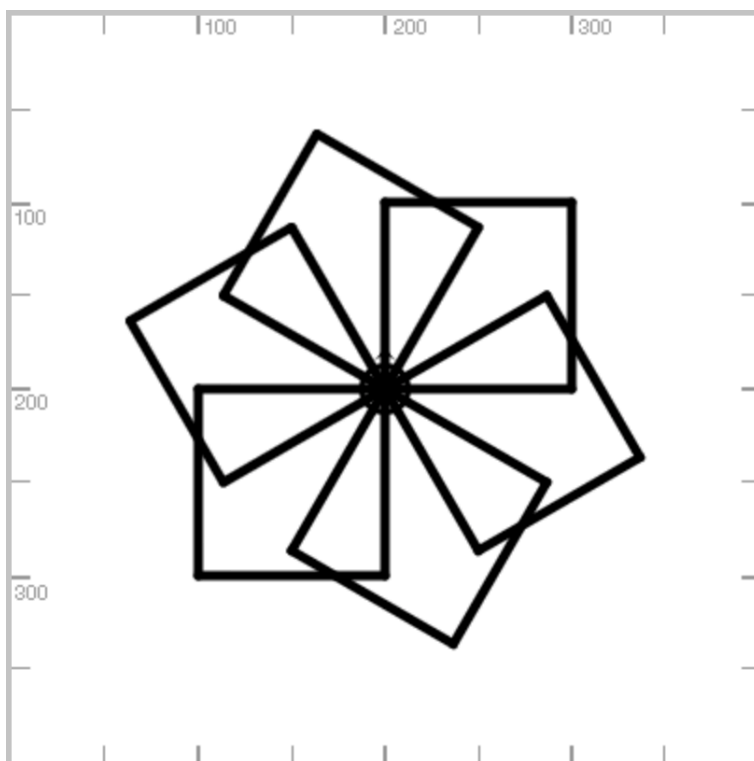


Orange Shell Challenge Cards

6

Challenge:

Use a **loop** to make a square and then, put these **code blocks** inside another **loop**, turning 60° to make 6 more squares.





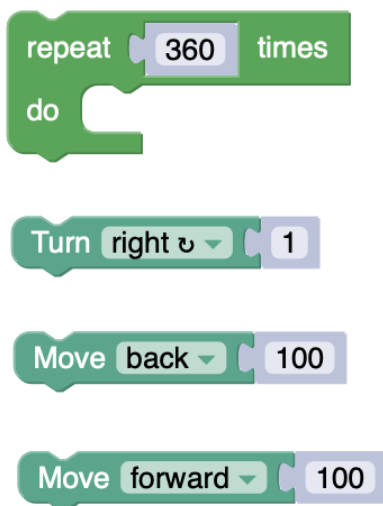
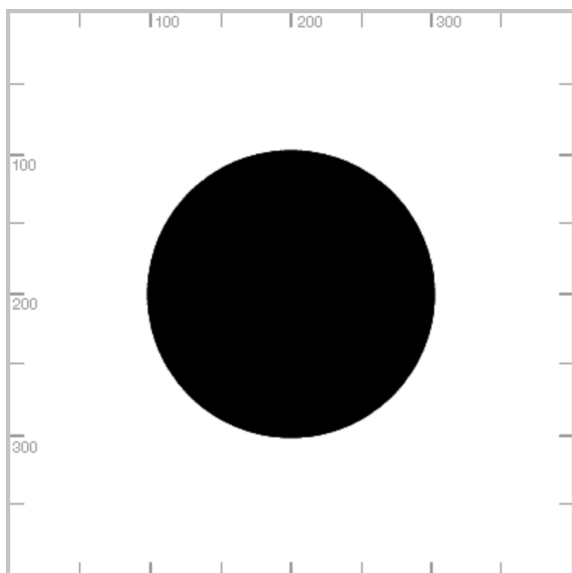
Orange Shell Challenge Cards

7

Challenge:

Draw a circle using only the blocks shown.

You may want to go as fast as a hare!



Extra:

Once you have got this **program** to work, try adding the *random colour* block inside the **loop**.



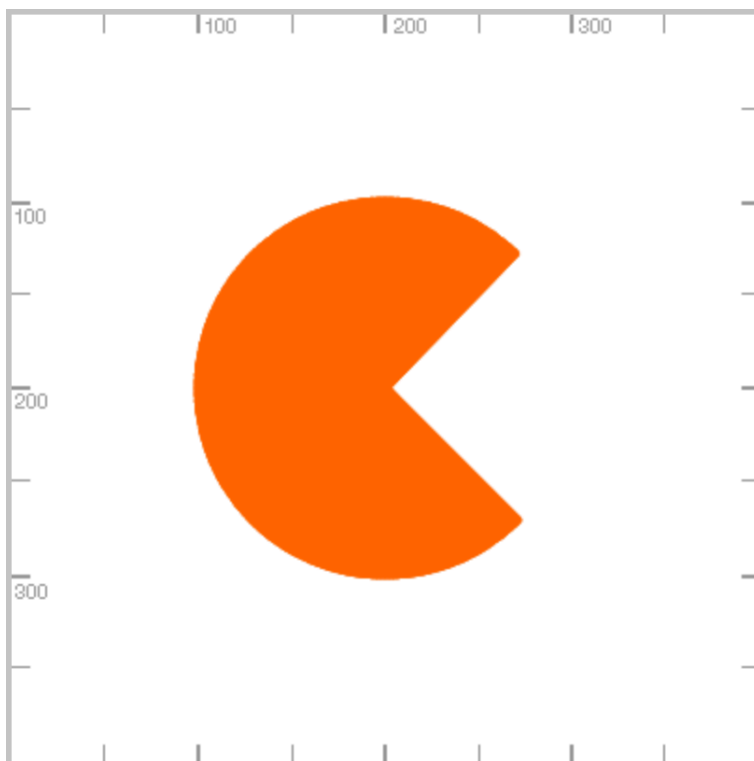
Orange Shell Challenge Cards

8

Challenge:

Draw a cake with a slice missing.

(Only try and make this after completing Card 7.)





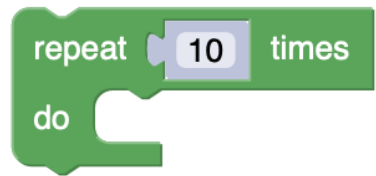
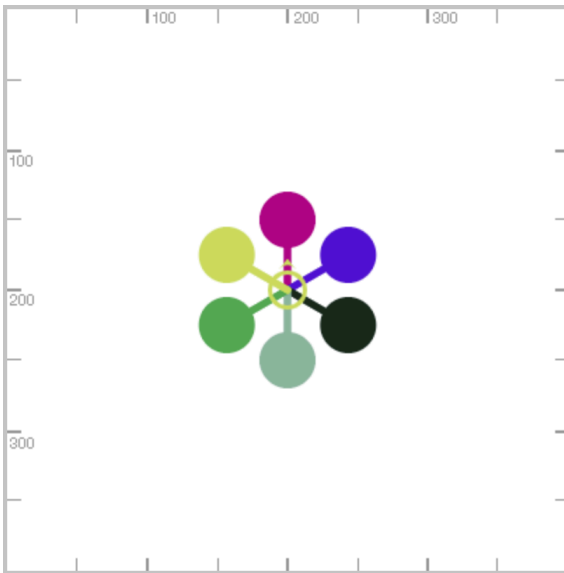
Orange Shell Challenge Cards

9

Challenge:

Draw six circles.

Your **program** must use the **code blocks** shown below but you will need to change them. You will also need some other **code blocks** to make it work.



Extra:

Draw the six circles but do not draw the connecting lines.

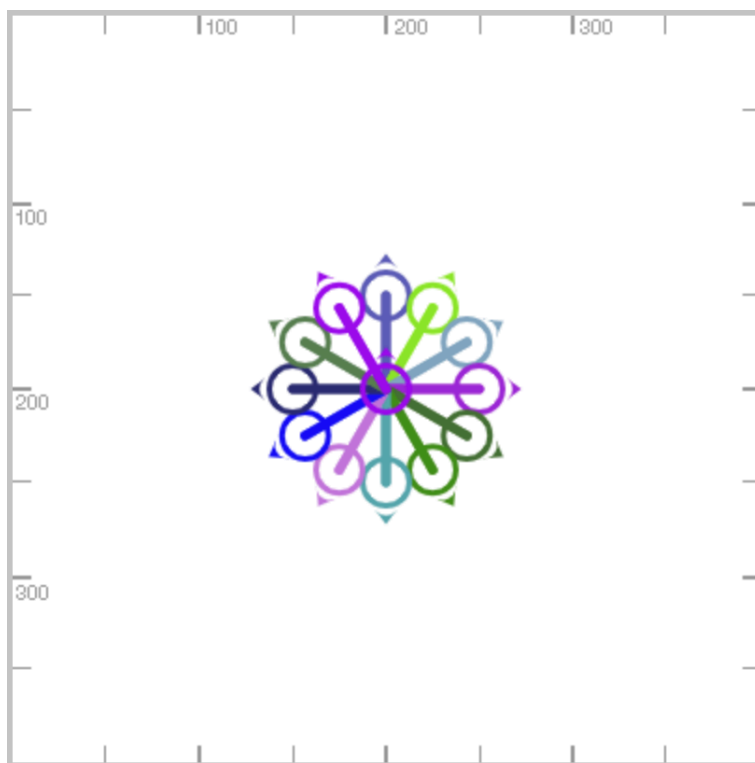


Orange Shell Challenge Cards

10

Challenge:

Use the *Stamp* block to make a colourful clock pattern.



Hint:

You will need to turn 30° a lot and use the *random colour* code block.

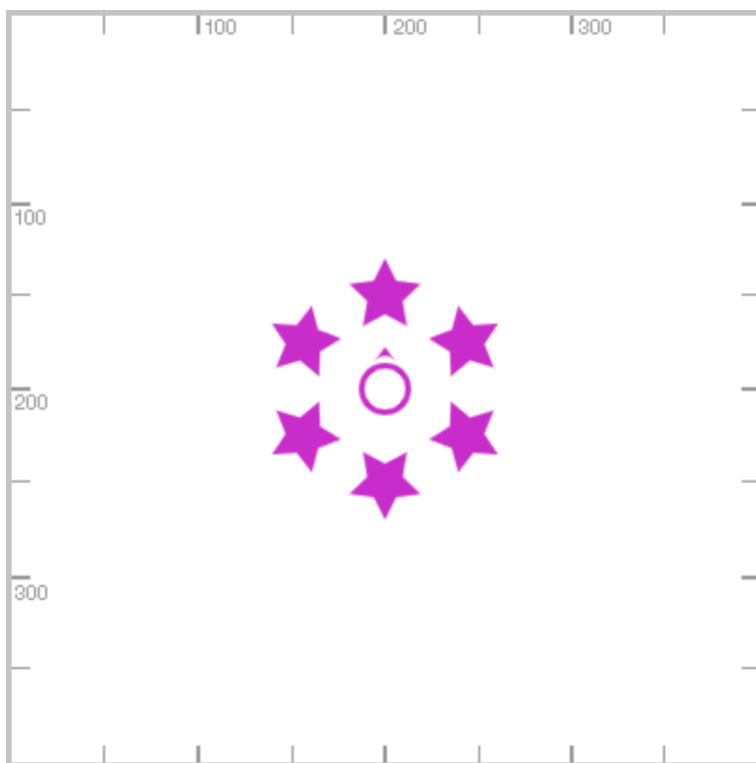


Orange Shell Challenge Cards

11

Challenge:

Draw six pink stars.



Hint:

To create something like this, use the *set colour to* and the *Draw square* **code blocks**.

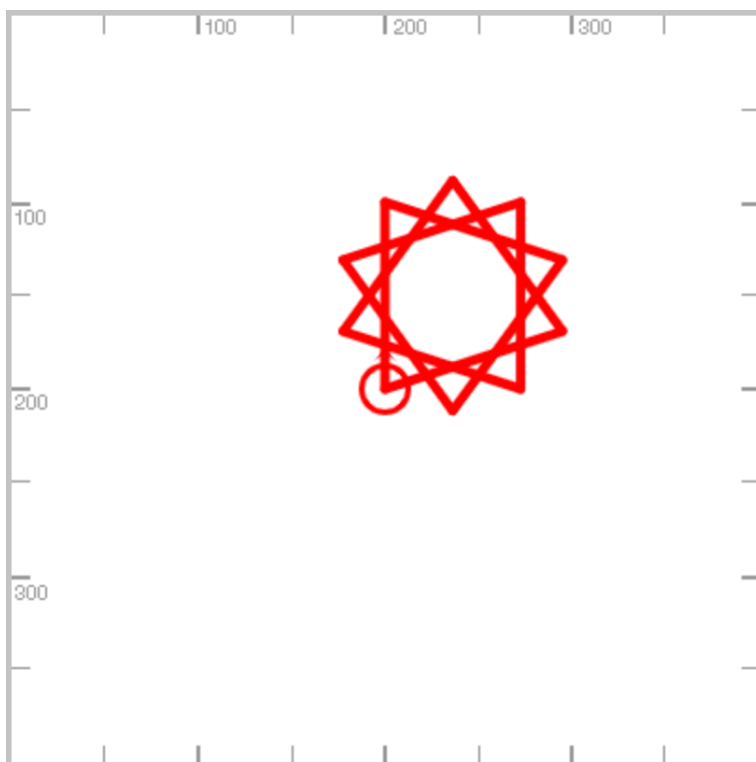


Orange Shell Challenge Cards

12

Challenge:

Draw a 10-point star.



Hint:

Turning 108° is the key to this 10-point star.

Extra:

Can you make any other types of star?

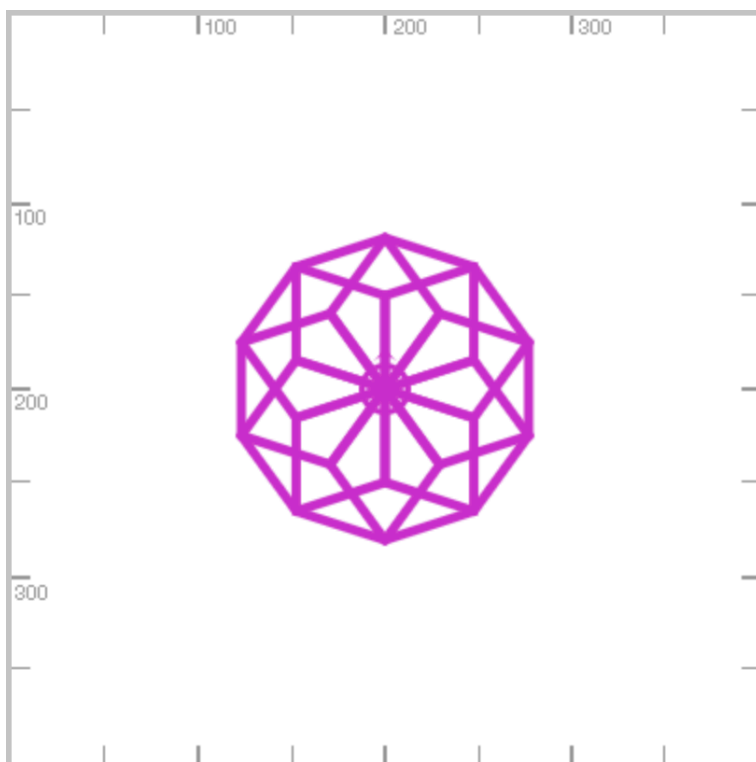


Orange Shell Challenge Cards

13

Challenge:

Draw a pink rose.



Hints:

1. Make a pentagon (by turning 72° five times).
2. Turn 108° and make another one.
3. You will need to draw 10 pentagons.

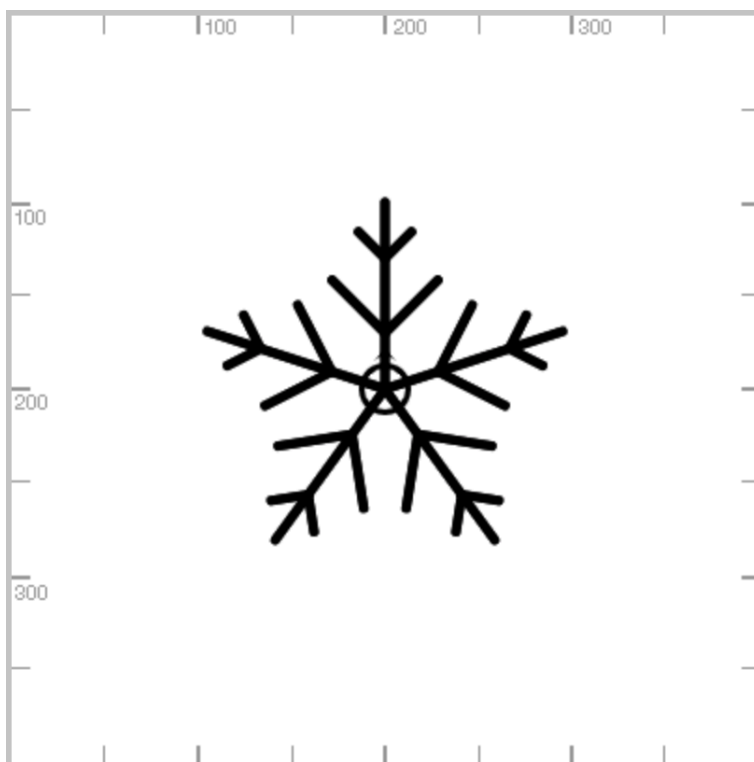


Orange Shell Challenge Cards

14

Challenge:

Draw a snowflake.



Hint:

You're on your own with this one. Good luck!