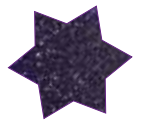


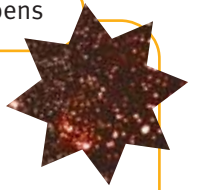
Starry-eyed



You need: a photocopy of the star polygon copymasters, coloured pencils, felt-tip pens

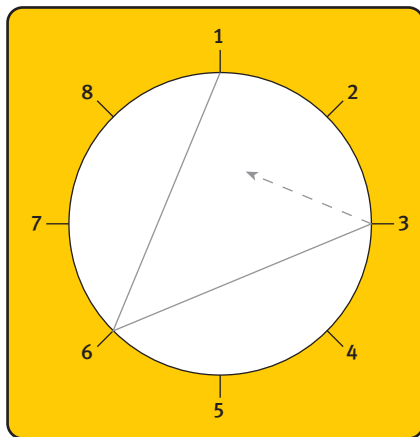
ACTIVITY ONE

Traditionally, Islamic artists have not drawn pictures of people or animals. Instead, they have used shapes from geometry, especially star polygons.



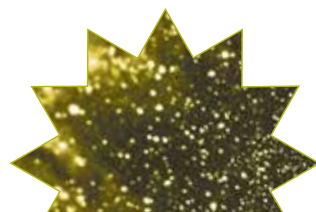
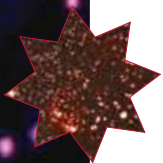
1. a. Follow these instructions to draw an $8/3$ star polygon:

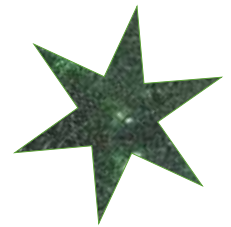
| | | |
|--------------------------------------|--|--|
| | | |
| <p>Start with an 8-point circle.</p> | <p>Using a pencil, start at 1, count on 3 points, then join them ...</p> | <p>Continue counting and joining until the star polygon is complete.</p> |



- b. Using an 8-point circle, start at 1 and join every fifth number.
 c. Compare the $8/5$ star polygon with the $8/3$ star polygon. Explain what you find.

2. Use a 10-point circle to create these star polygons. If necessary, lift your pencil to complete the design.
- | | |
|-----------|-----------|
| a. $10/3$ | b. $10/6$ |
| c. $10/4$ | d. $10/7$ |
| e. $10/2$ | f. $10/1$ |
3. Create all possible star polygons using a 9-point circle. How many are there?

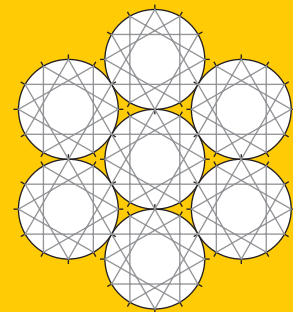
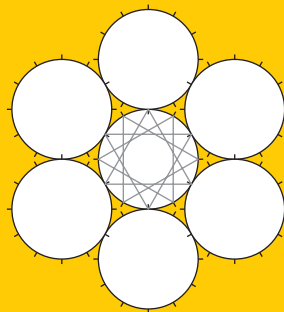
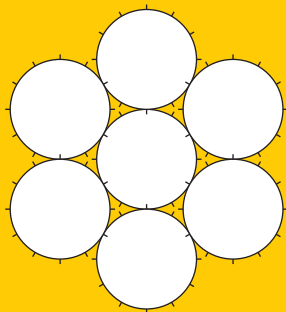




4. a. Without drawing the shapes, make these predictions for a 16-point circle:
 - i. What will $16/1$ look like?
 - ii. What will $16/8$ look like? (You would need to lift your pencil to complete this one.)
 - iii. What other star will be the same as $16/5$?
 - iv. Which stars could you not draw without lifting your pencil?
 - v. How many different stars will there be?
 - vi. Which star polygon will be the most “pointy”?
- b. Check your predictions by drawing all possible stars using a 16-point circle.

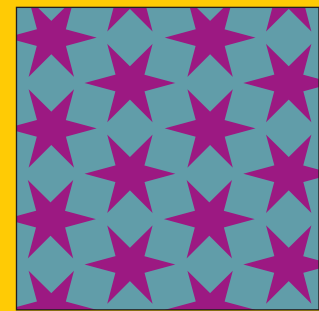
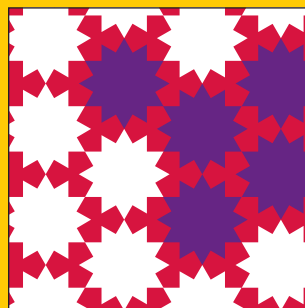
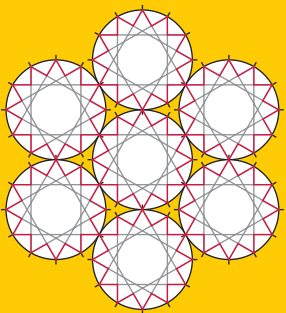
ACTIVITY TWO

1. Create this design, starting with a cluster of 12-point circles:



Using a pencil, draw a $12/4$ star polygon in the middle circle.

Do the same in each circle.



Using a pen, outline each star.
Rub out the pencil lines.

Colour in your design.

2. Can you work out how this design was made?

