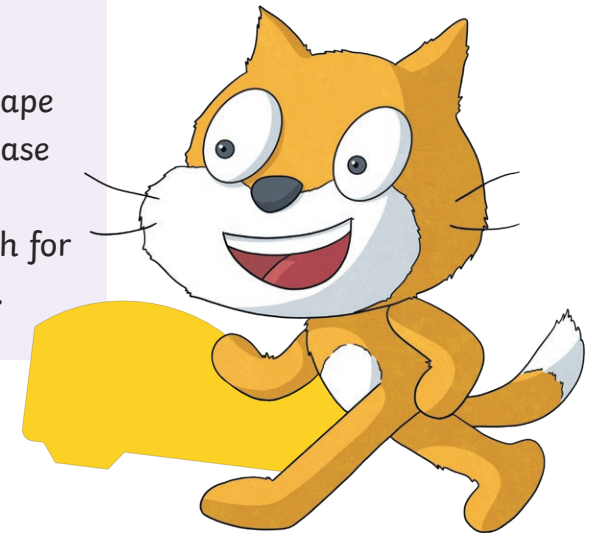Coding 2D Shapes Using Scratch

Teacher Note:

Answers for each 2D shape have been provided. Please note that children may choose a different length for the sides of their shape.

Coding 2D Shapes Using Scratch

Challenge 1

Use Scratch blocks to create this algorithm to draw a shape. Can you predict what the shape will be?

What shape did you draw?

```
when 🏳 clicked
pen down
move 100 steps
turn ↺ 120 degrees
move 100 steps
turn ↺ 120 degrees
move 100 steps
turn ↺ 120 degrees
pen up
```
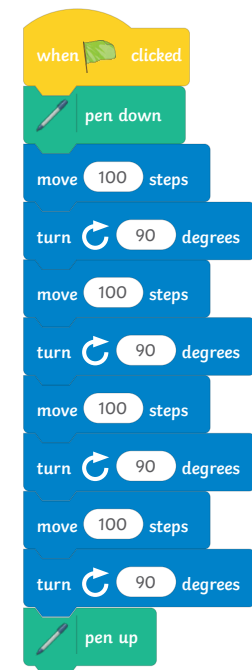
Coding 2D Shapes Using Scratch

Challenge 2

Use Scratch blocks to create this algorithm to draw a shape. Can you predict what the shape will be?

What shape did you draw?

```
when 🏳 clicked
pen down
move 100 steps
turn ↻ 90 degrees
move 100 steps
turn ↻ 90 degrees
move 100 steps
turn ↻ 90 degrees
move 100 steps
turn ↻ 90 degrees
pen up
```

Challenge 3
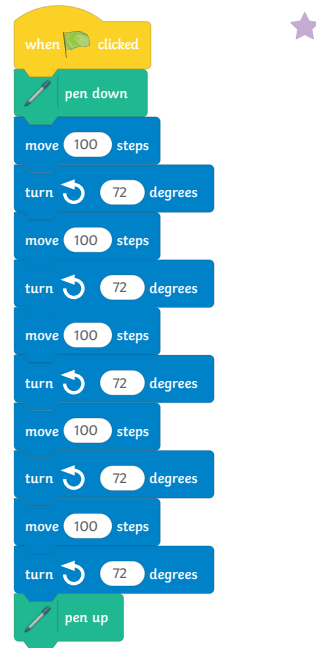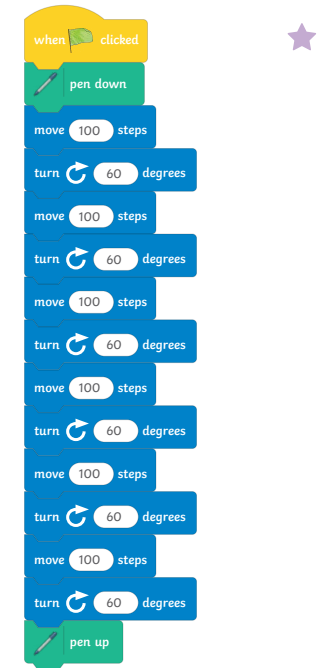
Coding 2D Shapes Using Scratch ⭐

Use Scratch blocks to create this algorithm to draw a shape. Can you predict what the shape will be?

What shape did you draw?

```
when 🏳 clicked
pen down
move 100 steps
turn ↺ 72 degrees
move 100 steps
turn ↺ 72 degrees
move 100 steps
turn ↺ 72 degrees
move 100 steps
turn ↺ 72 degrees
move 100 steps
turn ↺ 72 degrees
pen up
```

Challenge 4

Coding 2D Shapes Using Scratch ⭐

Use Scratch blocks to create this algorithm to draw a shape. Can you predict what the shape will be?
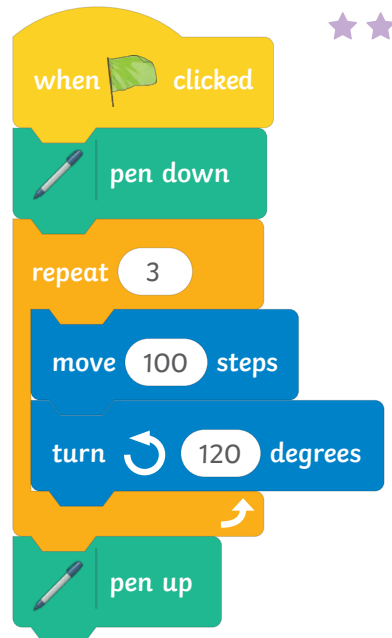
What shape did you draw?

```
when 🏳 clicked
pen down
move 100 steps
turn ↻ 60 degrees
move 100 steps
turn ↻ 60 degrees
move 100 steps
turn ↻ 60 degrees
move 100 steps
turn ↻ 60 degrees
move 100 steps
turn ↻ 60 degrees
move 100 steps
turn ↻ 60 degrees
pen up
```

Challenge 1

Coding 2D Shapes Using Scratch ⭐⭐

Use a **repeat** block in Scratch to create an algorithm to draw a shape. Can you predict what the shape will be?

What shape did you draw?

```
when 🏳 clicked
pen down
repeat 3
    move 100 steps
    turn ↺ 120 degrees
pen up
```

Challenge 2

Coding 2D Shapes Using Scratch ⭐⭐

Use a **repeat** block in Scratch to create an algorithm to draw a shape. Can you predict what the shape will be?

What shape did you draw?

```
when 🏳 clicked
pen down
repeat 4
    move 100 steps
    turn ↻ 90 degrees
pen up
```

Coding 2D Shapes Using Scratch

★ ★

Challenge 3

Use a **repeat** block in Scratch to create an algorithm to draw a shape. Can you predict what the shape will be?
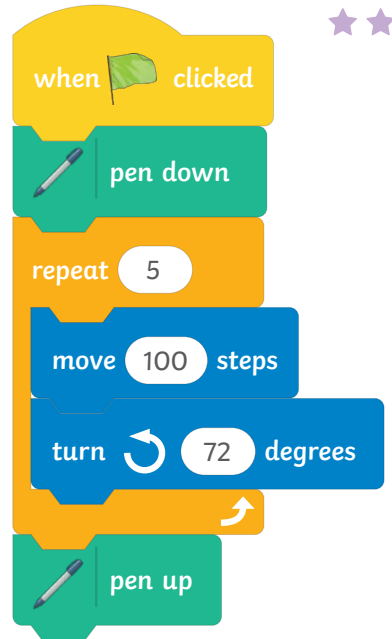
What shape did you draw?

```
when [flag] clicked
pen down
repeat 5
    move 100 steps
    turn ↺ 72 degrees
pen up
```

Coding 2D Shapes Using Scratch

★ ★

Challenge 4

Use a **repeat** block in Scratch to create an algorithm to draw a shape. Can you predict what the shape will be?
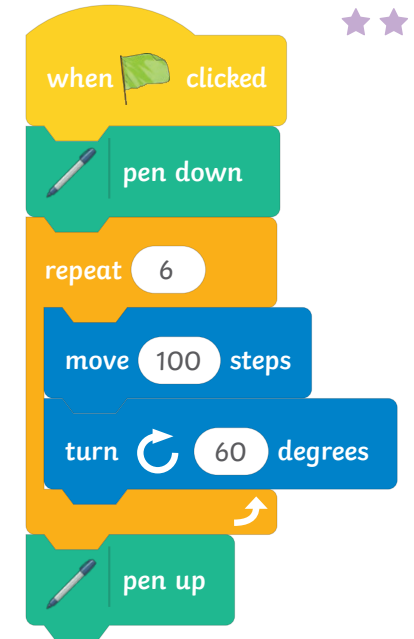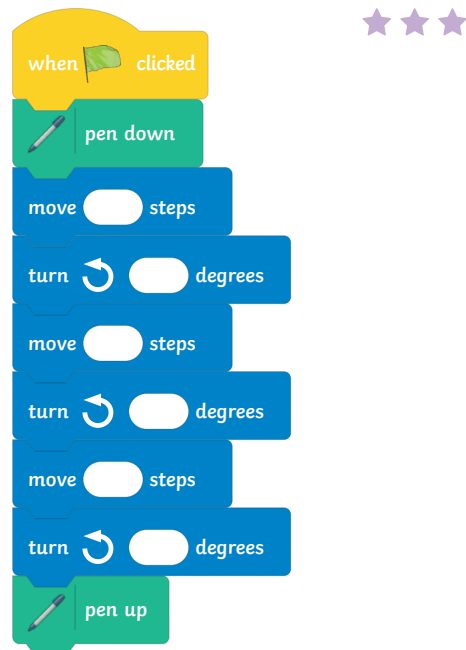
What shape did you draw?

```
when [flag] clicked
pen down
repeat 6
    move 100 steps
    turn ↻ 60 degrees
pen up
```

Coding 2D Shapes Using Scratch

★ ★ ★

Challenge 1

Complete the code to draw a triangle.

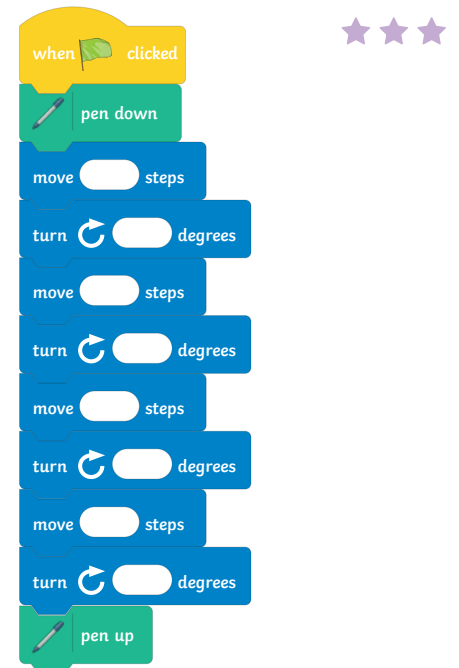**Helpful Hint:** To draw a triangle each angle would need to be 120 degrees.

```
when [flag] clicked
pen down
move ( ) steps
turn ↺ ( ) degrees
move ( ) steps
turn ↺ ( ) degrees
move ( ) steps
turn ↺ ( ) degrees
pen up
```

Coding 2D Shapes Using Scratch

★ ★ ★

Challenge 2

Complete the code to draw a square.

Helpful Hint: To draw a square each angle would need to be 90 degrees.

```
when [flag] clicked
pen down
move ( ) steps
turn ↻ ( ) degrees
move ( ) steps
turn ↻ ( ) degrees
move ( ) steps
turn ↻ ( ) degrees
move ( ) steps
turn ↻ ( ) degrees
```

Challenge 3

Coding 2D Shapes Using Scratch

★ ★ ★

Complete the code to draw a pentagon.

Helpful Hint: To draw a pentagon each angle would need to be 72 degrees.

```
when 🏳 clicked
pen down
move ◯ steps
turn ↺ ◯ degrees
move ◯ steps
turn ↺ ◯ degrees
move ◯ steps
turn ↺ ◯ degrees
move ◯ steps
turn ↺ ◯ degrees
move ◯ steps
turn ↺ ◯ degrees
pen up
```

Challenge 4

Coding 2D Shapes Using Scratch

★ ★ ★

Complete the code to draw a hexagon.

Helpful Hint: To draw a hexagon each angle would need to be 60 degrees.

```
when 🏳 clicked
pen down
move ◯ steps
turn ↻ ◯ degrees
move ◯ steps
turn ↻ ◯ degrees
move ◯ steps
turn ↻ ◯ degrees
move ◯ steps
turn ↻ ◯ degrees
move ◯ steps
turn ↻ ◯ degrees
move ◯ steps
turn ↻ ◯ degrees
pen up
```

Challenge 5

Coding 2D Shapes Using Scratch

★ ★ ★

Complete the code to draw a triangle using a **repeat** loop.

Helpful Hint: To draw a triangle each angle would need to be 120 degrees.

```
when 🏳 clicked
pen down
repeat ◯
  move ◯ steps
  turn ↺ ◯ degrees
pen up
```

Challenge 6

Coding 2D Shapes Using Scratch

★ ★ ★

Complete the code to draw a square using a **repeat** loop.

Helpful Hint: To draw a square each angle would need to be 90 degrees.

```
when 🏳 clicked
pen down
repeat ◯
  move ◯ steps
  turn ↻ ◯ degrees
pen up
```

★ ★ ★

Challenge 7

Add the missing code to draw a pentagon using a **repeat** loop.

Helpful Hint: To draw a pentagon each angle would need to be 72 degrees.

when 🏳 clicked

pen down

repeat ⬭

move ⬭ steps

turn ↺ ⬭ degrees

pen up

★ ★ ★

Challenge 8

Add the missing code to draw a hexagon using a **repeat** loop.

Helpful Hint: To draw a hexagon each angle would need to be 60 degrees.

when 🏳 clicked

pen down

repeat ⬭

move ⬭ steps

turn ↻ ⬭ degrees

pen up

Answer - triangle

```
when [flag] clicked
pen down
move 100 steps
turn ↻ 120 degrees
move 100 steps
turn ↻ 120 degrees
move 100 steps
turn ↻ 120 degrees
pen up
```

```
when [flag] clicked
pen down
repeat 3
    move 100 steps
    turn ↻ 120 degrees
pen up
```

Answer - square

```
when [flag] clicked
pen down
move 100 steps
turn ↻ 90 degrees
move 100 steps
turn ↻ 90 degrees
move 100 steps
turn ↻ 90 degrees
move 100 steps
turn ↻ 90 degrees
pen up
```

```
when [flag] clicked
pen down
repeat 4
    move 100 steps
    turn ↻ 90 degrees
pen up
```

Answer - pentagon

```
when [flag] clicked
pen down
move 100 steps
turn ↻ 72 degrees
move 100 steps
turn ↻ 72 degrees
move 100 steps
turn ↻ 72 degrees
move 100 steps
turn ↻ 72 degrees
move 100 steps
turn ↻ 72 degrees
pen up
```

```
when [flag] clicked
pen down
repeat 5
    move 100 steps
    turn ↻ 72 degrees
pen up
```

Answer - hexagon

```
when [flag] clicked
pen down
move 100 steps
turn ↻ 60 degrees
move 100 steps
turn ↻ 60 degrees
move 100 steps
turn ↻ 60 degrees
move 100 steps
turn ↻ 60 degrees
move 100 steps
turn ↻ 60 degrees
move 100 steps
turn ↻ 60 degrees
pen up
```

```
when [flag] clicked
pen down
repeat 6
    move 100 steps
    turn ↻ 60 degrees
pen up
```