**Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Date**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

LOGO Lesson 2

# Do Now

**Use a green pen to correct the code below. There are a total of 10 mistakes.**

clear

fd 50

left 90

fd20

bc 100

up 50

rt 120

nopen

FD 60

pen down

rt 90 fd 50

clear

**Complete these sentences:**

A polygon is a closed ………………… shape with ………………………………… sides.

A regular polygon is a polygon where all …………………………………………………………………………………… and all …………………….. are equal, e.g. equilateral triangle of square

**Put a tick inside the regular polygons below:**

**Homework written down? Green pen out?**

**Extension:**

Below each of the polygons above, write the sum of the interior angles, e.g. below the triangles, write 180°

# Learning objective:

To use the REPEAT function in LOGO to draw regular polygons.

# Activity One – Introducing ‘repeat’

**Type this into LOGO:**

clear

home

fd 80

lt 120

fd 80

lt 120

fd 80

lt 120

#

**What shape does this make?** 🖉 …………………………………………………………………………………..

**Can you explain why the turtle is turning 120° and not 60°?** 🖉 …………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………..

……………………………………………………………………………………………………………………………………………………………………………………..

**Now type in this code:**

clear

home

repeat 3

fd 80

lt 120

end

**What shape does this make?** 🖉 …………………………………………………………………………………..

Both these codes make the same shape but the words are different.

**What are the main differences between the two codes?** 🖉 ……………………………………………………………………………………..

……………………………………………………………………………………………………………………………………………………………………………………..

……………………………………………………………………………………………………………………………………………………………………………………..

Here is the code for a square.

50

50

clear

You can type your completed code into LOGO to see if this works.

home

repeat 4

fd 50

rt 90

end

**Some code to help you:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Pentagon** | **Hexagon** | **Octagon** | **Decagon** |
|  |  |  |  |
| clearhomerepeat 5fd 100rt 72end | clearhomerepeat 6fd 100rt 60end | clearhomerepeat 8fd 80rt 45end | clearhomerepeat 10fd 50rt 36end |

**LOGO Log #1**

**Write down what you have learned about LOGO so far today.**

Today, I have learned …………………………………………………………………………………………………………………………………………………..

…………………………………………………………………………………………………………………………………………………………………………………….

…………………………………………………………………………………………………………………………………………………………………………………….

…………………………………………………………………………………………………………………………………………………………………………………….

# Merit Challenges

You can now use LOGO to ‘freestyle’ (make up your own designs) or you can attempt these merit challenges.
**Each one is worth 1 merit but you need to show the teacher your computer screen to qualify.**

Note each shape is made from regular polygons.

**Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Date**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

LOGO Lesson 3

# Do Now

**Use a green pen to correct the code below. There are a total of 10 mistakes.**

clear

fd 50

left 90

fd20

bc 100

up 50

rt 120

nopen

FD 60

pen down

rt 90 fd 50

clear

**Complete these sentences:**

A polygon is a closed ………………… shape with ………………………………… sides.

A regular polygon is a polygon where all …………………………………………………………………………………… and all …………………….. are equal, e.g. equilateral triangle of square

**Put a tick inside the regular polygons below:**

**Homework written down? Green pen out?**

**Extension:**

Below each of the polygons above, write the sum of the interior angles, e.g. below the triangles, write 180°

# Learning objective:

To use the REPEAT function in LOGO to draw regular polygons and to draw circles.

# Activity One – Introducing ‘repeat’

# What is the size of angle a? 🖉 ………………………………..

60°

60°

60°

a

b

c

**What is the size of angle b?** 🖉 ………………………………..

**What is the size of angle c?** 🖉 ………………………………..

**Type this into LOGO:**

clear

home

fd 80

lt 120

fd 80

lt 120

fd 80

lt 120

#

**What shape does this make?** 🖉 …………………………………………………………………………………..

**Can you explain why the turtle is turning 120° and not 60°?** 🖉 …………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………..

……………………………………………………………………………………………………………………………………………………………………………………..

**Now type in this code:**

clear

home

repeat 3

fd 80

lt 120

end

**What shape does this make?** 🖉 …………………………………………………………………………………..

Both these codes make the same shape but the words are different.

**What are the main differences between the two codes?** 🖉 ……………………………………………………………………………………..

……………………………………………………………………………………………………………………………………………………………………………………..

……………………………………………………………………………………………………………………………………………………………………………………..

Let’s look at the code more closely. **Answer the questions.**

repeat 3

**What is the number 3 doing?** 🖉 ………………………………………………….

………………………………………………………………………………………………………

fd 80

**What is this code between ‘repeat’ and ‘end’ doing?** 🖉 ……………

………………………………………………………………………………………………………

lt 120

end

**What is the word ‘end’ here for?** 🖉 …………………………………………………………………….

………………………………………………………………………………………………………………………………

Here is the code for a square.

50

clear

home

fd 50

rt 90

50

fd 50

rt 90

fd 50

rt 90

fd50

rt90

You can type in just to check if you like but you should be able to work it out.

**Now complete the code for a square below using ‘repeat’.**

clear

You can type your completed code into LOGO to see if this works.

home

repeat …………

fd 50

rt 90

…………

**Some code to help you:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Pentagon** | **Hexagon** | **Octagon** | **Decagon** |
|  |  |  |  |
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# Merit Challenges

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LOGO Lesson 3

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rt 90 fd 50

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**Extension:**

Below each of the polygons above, write the sum of the interior angles, e.g. below the triangles, write 180°

# Learning objective:

To use the REPEAT function in LOGO to draw regular polygons and to draw circles.

# Activity One – Introducing ‘repeat’

# What is the size of angle a? 🖉 ………………………………..

60°

60°

60°

a

b

c

**What is the size of angle b?** 🖉 ………………………………..

**What is the size of angle c?** 🖉 ………………………………..

**Type this into LOGO:**

clear

home

fd 80

lt 120

fd 80

lt 120

fd 80

lt 120

#

**What shape does this make?** 🖉 …………………………………………………………………………………..

**Can you explain why the turtle is turning 120° and not 60°?** 🖉 …………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………..

……………………………………………………………………………………………………………………………………………………………………………………..

**Now type in this code:**

clear

home

repeat 3

fd 80

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**What is the number 3 doing?** 🖉 ………………………………………………….

………………………………………………………………………………………………………

fd 80

**What is this code between ‘repeat’ and ‘end’ doing?** 🖉 ……………

………………………………………………………………………………………………………

lt 120

end

**What is the word ‘end’ here for?** 🖉 …………………………………………………………………….

………………………………………………………………………………………………………………………………

Here is the code for a square.

50

clear

home

fd 50

rt 90

50

fd 50

rt 90

fd 50

rt 90

fd50

rt90

You can type in just to check if you like but you should be able to work it out.

**Now complete the code for a square below using ‘repeat’.**

clear

You can type your completed code into LOGO to see if this works.

home

repeat …………

fd 50

rt 90

…………

**Logo Log #1**

**Write down what you have learned about LOGO so far today.**

Today, I have learned …………………………………………………………………………………………………………………………………………………..

…………………………………………………………………………………………………………………………………………………………………………………….

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# Activity Two – working out how far to turn

**Now complete the code for a regular pentagon:**

clear

home

repeat 5

fd 50

lt 🖉 ……………

end

🖉 ……………

🖉 ……………

Hint: Calculate me first using 180(n – 2)

Then calculate me!

🖉 ……………

Hint: Calculate me first using 180(n – 2)

🖉 ……………

Then calculate me!

**Now complete the code for a regular hexagon:**

clear

home

repeat 6

fd 50

lt 🖉 ……………

end

**Complete the code for a regular octagon and a regular decagon**

|  |  |
| --- | --- |
| **Octagon** | **Decagon** |
|  |  |
| clearhomerepeat 8fd 50lt 🖉 ……………end | clearhomerepeat 10fd 50lt 🖉 ……………end |

**Now try the Merit Challenges on the screen!**