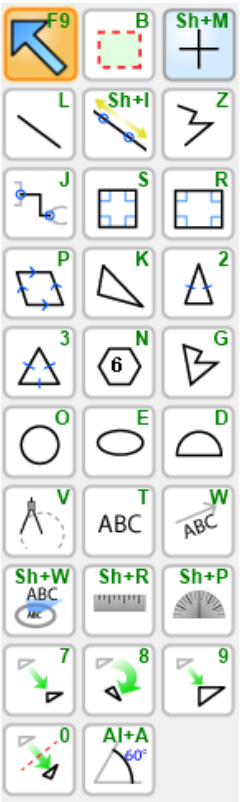
3. Secondary Geometry



There are more than 20 tools available to the user on the Geometric Drawing Activity. There are 16 shape tools, 3 writing tools, 4 transformation tools and 3 measuring tools.

Start by selecting the "Edit Grid and Background" button at the top of the screen or select Page – Edit Grid and Background. This enables you to choose squared or isometric paper and also change the size of the grid.

"Snap to Grid" will ensure that your shape starts at the nearest grid intersection.

"Snap to Shape" will enable your protractor or ruler or another shape to snap to a corner or side of your shape.

Creating standard and irregular shapes:

Select a drawing tool or use the shortcuts in green (Z, S, R, P, K, 2, 3, N, G, O, E, D), then click in the picture area to start drawing and extend the pattern.

When you have made your shape, double click the mouse or press "Return/Enter", on the keyboard to finish it off.

If you need to delete a line that you have just drawn, right click on the mouse or press "Escape/esc" on the keyboard.

Moving Shapes:

To move a single shape select the F9 tool and then left click on the shape, move it to another position and left click again.

To move multiple shapes select the F9 tool and the multi-select tool, then left click on all the shapes you wish to move and then move them to another position and left click again.

The **Transformation Tool** (7) will open up two options that allow you to move or copy your shapes. You can also rotate shapes (8), reflect shapes (0) and re-scale shapes (9).

Editing shapes:

Use the **Fill Tool** (Q) to colour the shapes. Use the palettes on the right to change the line style or colour.

*You will need to highlight which shape you want to change by using the **F9** tool and then selecting the shape you want to change*

The **Writing Tools** (T, W and Sh+W). "T" will input text horizontally, "W" will write text at any angle and "Sh-W" will write text in the centre of a shape.

The **Shape Cutting Tool** (Sh+S): Draw a line across a shape using this tool. You can then use the move tool (F7) to move the two sections apart. Select "Snap to Shape" when putting them back together. This tool is useful for cutting shapes or pictures into half and quarters.

If you make a mistake, use the Rubber Tool (Sh+E) to delete shapes or writing

Measuring Shapes and Angles

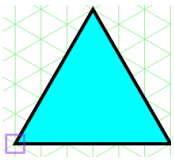
Make sure that you have the right type of paper and that 'Snap to Grid' is selected and then draw your shape.

Remember: for every tool there is a description at the bottom of the Splash! Screen that will tell you step-by-step what you need to do

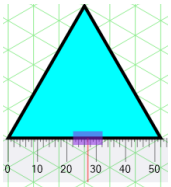
Three tools can be used to measure shapes. Before using these tools you must select Snap to Shape.

If you make a mistake or start the measurement on the wrong part of the shape right click to 'undo' or 'unfix' the line you have drawn. You can also use 'Ctrl + Z' or the buttons at any point if you want to undo something

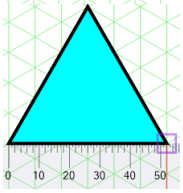
1. The **Ruler Tool** (Sh + R):



Select the Ruler tool and place your mouse over the corner of the shape until a purple flashing square appears, then left click.

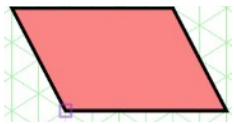


You can then move the cursor along the line of the shape you want to measure – a purple line will follow this movement.

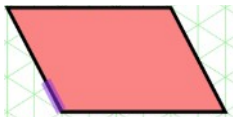


Then you must hover over the end-point of the measurement until another purple box flashes and then single left click to place the tool. A red line will then appear and this will show you what the size of the shape is.

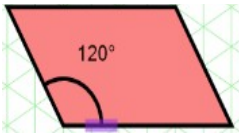
2. The **Label Angle Tool** (Alt + A):



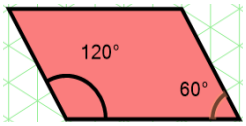
Hover over the corner of the shape until a purple flashing box appears.



Then move your cursor up the side of the angle you wish to measure – a purple line will follow the movement of your cursor – then left click where you want to start to draw the angle.



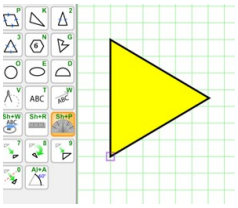
Move your cursor to the end-point of the angle and when purple line appears single left click to draw the angle.



The size of the angle will be measured and labelled automatically. You can increase or decrease the size of the radius by using the – and + keys on the keyboard.

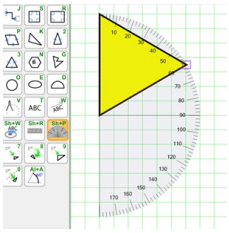
3. The **Protractor Tool** (Sh + P):

To place the triangle onto the grid lines you will need Snap to Grid

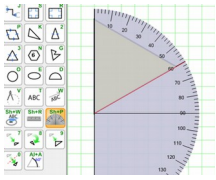


Before selecting the protractor you need to select Snap to Shape

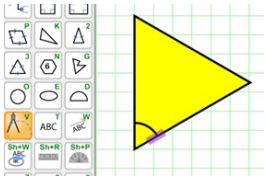
Now select the protractor tool (Sh+P) and move the pointer to the angle you want to measure. A flashing purple square will appear. Press left click.



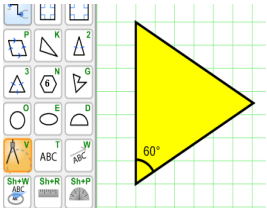
Start to move the pointer up to the next angle. Left click again when you see another purple flashing square appear. Now the protractor will appear and you will also see a red line which will follow your pointer as you move to the third angle on the triangle.



Now move to the third angle and left click again when you see the purple flashing square. The protractor will be fixed and the red line will indicate the size of the angle.



To draw an arc on the angle you are measuring you will need the compass tool (V). Move the pointer to the angle you wish to label and when you see the purple square press the left click. Now move the pointer along one of the sides of the triangle for a short distance. The purple square changes to a thin rectangle to guide you along the side of the triangle. Press left click again. Finally move the pointer across to the other side of the triangle. When you see the thin purple rectangle press left click again to fix the arc.



To write the angle you will need the text tool (T). Select this tool and move the pointer to the angle. Left click and start writing the number. To place the degree sign you need to use the keyboard shortcut ALT + 0.