

Education:

Age Range: 4 - 14 yrs.

Key Stages: 1, 2, & 3

Supports the following QCA schemes of work:

- 2D Routes:
controlling a floor turtle, program of study reference KS1, 2c, 4a, 4b
- 4E Modelling
effects on screen, program of study reference KS2, 1c, 2a, 2c

Scottish Pre 5 upwards

Quotes:

"...the levels overlap and flow naturally which makes the whole program less threatening and more accessible - so much so that this could easily be used in maths and geography, and not just relegated to ICT lessons."

"But it's the little touches which make this a winner such as the transparent arrow so you can see where the pen is."

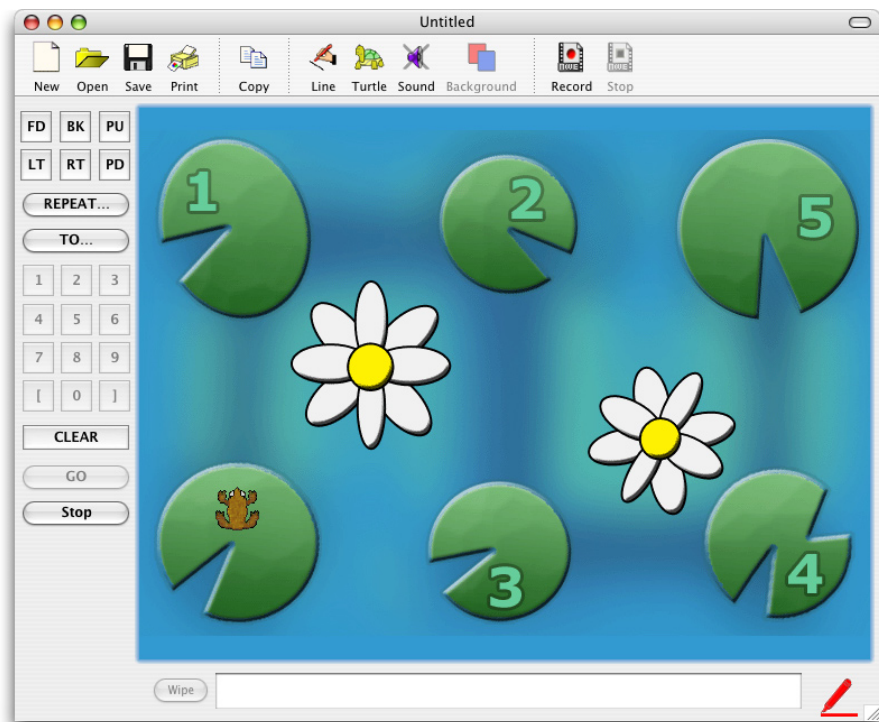
-Times
Educational
Supplement

"Terry the Turtle 2 is a very good introductory turtling program with a range of features, including backdrops, which make it great fun to use."

-Interactive

LOGO Made Easy

- Terry can be used at 4 different levels. Each level demonstrates progression from basic drawing to full LOGO programming.
- Contained within the program's library are a wide variety of prepared activities such as; navigating a ship to a treasure island, flying a rocket to a planet, moving around a map, and many more.
- Children can choose from lots of different types of fun turtles to draw their patterns, such as frogs, beetles, rockets and cars.
- Drawings can be saved out as picture files, or you can turn your Terry drawing into a QuickTime® movie and save them out as part of a web page.



- Terry has a configurable toolbar allowing users to create their own control panels. More advanced users can write procedures for Terry to follow using the LOGO language.
- Terry can be used right across the primary age range and into secondary for introducing and developing on screen modelling and logo skills.
- Dual platform (Windows, Mac OS).

Objectives:

- To write procedures using standard commands.
- To write repeating procedures for a purpose.
- To combine procedures to produce a desired outcome.
- To use angles of turn; 90°, 45°, and 30°, for a real purpose.

Resources:

- Terry the Turtle 2 software. This has a **Create Repeat** dialogue box that allows *Repeat Procedures* to be created easily and accurately. Saved *Repeat Procedures* can be used within other procedures.
- Use a data projector or an interactive whiteboard to present clearly to the whole group and allow for interaction during the demonstration.
- The file **Composite**, an example 'Trail' file, supplied with Terry, can be found on your local hard drive, under Program Files > Kudlian Soft > Terry > Trails (Mac: Applications > Terry the Turtle > Trails)
- Additional Terry files; **Trail Square**, and **Trail Triangle**, for some children to use as the *Repeat Procedure*.
- Additional Terry file; **Flower Examples**, for some images of *flower shapes* for children to look at.
- Additional Terry file; **Short Focused Task Examples**, which give examples and tasks of commands in Terry.
- The additional Terry files are available to download. Visit <http://www.kudlian.net> and navigate to the Resources section. Click on the Logo and Control graphic.

Preparation:

- Use the **Short Focused Task Examples**. These give the tasks and commands to use in Terry.
- Work at Level 3 using the simplified command bar for the short focused tasks.
- For the flower activity show the children how to set up Level 4. Go to **Edit** (Mac: Terry2 > Preferences) > **Level > 4** and **Movement > 10**

Demonstrate how to create a Repeat Procedure, and create a Repeat Procedure using a Repeat.

1. Click on the **REPEAT** button on the command bar.
2. Enter the number of repeats in the writable field labelled **REPEAT**.
3. Enter the commands in the writable field surrounded by brackets. **Notice the spaces are important.**
4. The text changes to blue when the correct sequence of commands are entered.
5. Click on the **GO** button to draw the shape.
6. To draw the shape again, click on the **GO** button once more.
7. To save the repeat as a procedure for this session, click on the **Store** button and give the shape a meaningful name, e.g. **SQUARE**.

Show how to make a repeating flower procedure using the shape **SQUARE**. (Refer to **Flower Examples** file) Repeat steps 1 and 2, then at step 3: Enter the commands in the writable field surrounded by

Task:

Combining an ICT activity with work on angle of turn, children use a logo program to create on screen crystal flowers. The flowers are created by repeatedly turning the prepared shapes the same angle.

brackets. Each command is entered onto a single line. Start with the name of the repeat shape, in this case **SQUARE**, and then the angle of turn, e.g. **RT 90** (right turn, 90°). Continue through steps 4 to 7. When you save the repeat as a procedure you can give the shape an alternative name.

In the Classroom:

- Remind the children of the short focused tasks they have carried out to draw the regular shapes by direct commands, and then by creating a repeat procedure, which they have named.
- Children will need to know that 360 degrees produces a full turn.
- Explain to the class that they will create a number of crystal flowers on screen.
- Tell them that they will need to write a number of repeat procedures, such as; square, rectangle, triangle, and pentagon, and that they will combine the shapes into a larger repeat procedure. The larger procedure will allow them to rotate the shapes 360° and produce a flower.
- An example procedure might be: repeat 12 [square, right 30] which would produce 12 squares with a rotation of 30° in between, producing a flower effect.
- Ask the children to first create a square as a repeat procedure, and investigate what happens when they turn Terry 90° and then draw the shape again.
- Ask them to repeat the turn until Terry is back at the beginning. *How many times has Terry turned?* Have a whole class demonstration before letting the children do it themselves.
- Then ask them to do the same with 45° and 30°.
- What do they notice about the number of turns for each angle? (Terry turns 4 times if the angle is 90°, 8 times if the angle is 45° etc.)
- Show how to make a repeating flower procedure using their shape.
- Stress the importance of trying out their ideas (modelling) before creating the flower repeat procedure.

Outcomes:

- Most children will create a flower, using one shape and rotating it; use the repeat instruction to duplicate the shape; and change the angle of turn using 90°, 45°, and 30°
- Some children will work from an example flower and change the procedure to create their own flowers; make mistakes, and need to amend their work.
- Some children will create flowers using more than one shape and rotating them; use the repeat instruction to duplicate shapes; investigate more complex shapes and sizes; change the angle of turn.