

4b. Sequencing Algorithms

Objectives: To understand what an algorithm is; to sequence steps in a task; to create an algorithm for others to follow

Suggested Activities:

- Discuss an everyday activity, such as brushing teeth, having lunch, buying a snack, getting dressed. Act out the activity, using props as necessary. Provide pupils with images of the activity, either print outs or in a digital document, and ask them to put them in the correct order to show the steps of the activity. Write captions for each photo. Explain that this is called an algorithm – a sequence of instructions to get something done. Discuss what happens if the order of instructions is incorrect e.g. if you put your shoes on before your socks.
- Provide pupils with key parts of a familiar story, in an appropriate format, e.g. text, images or audio on a recordable button. Ask them to put the parts into the order they appear in the story. Can they retell the story using the parts as prompts? See the [Story Sequencing](#) activity for more ideas.
- Pupils can create their own algorithms by taking photos of an activity, adding to a document and labelling. For example how to log onto the computer, making a glass of squash, catching the bus. Discuss the importance of the instructions being clear and in the right order. This could be done as a series of slides in a presentation, as a poster, or a comic strip. See the Barefoot [Lego Algorithms](#) activity for one way of doing this.
- Use music and dance to look at sequences – create a sequence of dance moves for others to follow. Use the [Minibeast Rhythms](#) activity to create clapping rhythms to follow (*bee-tle / cat-er-pill-ar / snail / butt-er-fly*). For other topic areas, pupils can choose 4 images in an order and stick to the board. Create tunes using the Barefoot [Musical Programming: Colours](#) activity; create a class dance using the Barefoot [Dance Moves Algorithm](#) resource; sequence a well-known song using the Barefoot [Heads, Shoulder, Knees and Toes resource](#) (login required for Barefoot activities).
- Complete the [Jam Sandwich Robot](#) activity – pupils give you instructions to make a jam sandwich, but they need to be clear and precise, otherwise the activity will go wrong. This could be done with a range of tasks, e.g. cleaning teeth, putting on coat. Provide key words for pupils to write better instructions.
- Pupils work in pairs, sitting back to back: give one pupil a simple shape or image, and they have to give clear and precise instructions to the other person to draw the image (without them seeing it). Compare the two images once finished. Discuss the importance of using precise instructions, and how to make the task easier (e.g. using a grid and reference points, a shared vocabulary etc.)

RESOURCES

Weblinks

These Barefoot activities contain comprehensive lesson notes. You will need to register for a login (free) to access them:

[Barefoot Activity: Lego Algorithms](#)

[Barefoot Activity: Story Sequencing](#)

[Barefoot Activity: Heads, Shoulders, Knees and Toes Algorithm](#)

[Barefoot Activity: Dance Moves Algorithm](#)

[Barefoot Activity: Musical Sequences](#)

[Minibeast Rhythms](#)

<http://www.wikihow.com/Teach-Sequencing-to-Preschool-Children> - examples and sets of images for sequencing activities

[Phil Bagge's Jam Sandwich resources](#)

[Phil Bagge's Human Crane resources](#)

Software

PowerPoint/Word
2Publish/2Write
Comic Life

iPad apps

Pic Collage
Pure Flow (flow charts)
Notability
Strip Designer/Comic Life
Sequences – Preschool Exercises

Assessment

Most pupils should be able to:

- *Identify the steps of a known task*
- *List the steps of a known task in order*
- *Understand what an algorithm is*

Some pupils will be able to:

- *Explain that the order of instructions in an algorithm is important*
- *Use clear and precise instructions in an algorithm*
- *Create an algorithm for someone else to follow*