

**Disclaimer: Activities with children must always be risk assessed, including for allergies or choking. Children must always have adequate supervision. Resources and materials must always be appropriate for children's age and stage of development.**

## Compost in a bottle

### Learning aims

- To begin to understand how decay is required for new life, for example, to make soil for seeds to grow into new plants
- To explore change over time.



### Resources

- Two litre plastic drink bottle, empty
- Sharp scissors (for adult use)
- Packet of compost maker or accelerator from the garden centre
- Materials for different layers, for example, leaves, dry grass, fruit and vegetable peelings, used coffee grounds
- Spray bottle for water
- Sticky tape or duct tape
- Large spoon or trowel
- Shredded newspaper
- Soil or compost.

### Activity outline

Exploring decay with children is an opportunity to engage them with observing changes over time and begin to develop an understanding of how decay is part of a plant's life cycle.

1. Introduce the activity to the children. Tell them that you are going to make compost which helps plants to grow
2. Explain that over a long period of time the materials that you add in today, will rot down (or decay) to make compost, which is a bit like soil
3. Let them know that soil is made from decaying things but contains 'food' to help seeds and new plants grow
4. A third of a way down the plastic bottle, cut the bottle almost open but leave a small section that acts like a hinge on the opening
5. Invite the children to use the spoon or trowel to add two to three cm of soil or compost to the bottom of the bottle. Add two to three cm of vegetable peelings and cover with a thin layer of soil or compost.

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6. This is a good opportunity to talk about reusing fruit and vegetable waste
7. Add another layer of vegetable or fruit peelings and cover with soil
8. Add a layer of shredded newspaper and cover with soil
9. Repeat these layers, including the leaves, dry grass, coffee grounds, etc. until they are nearly up to where you made the cut
10. Sprinkle the final layer of the soil with compost accelerator
11. Spray with water and tape the bottle closed
12. Now leave to one side, inside or out, and observe the changes over time with the children. It will make an excellent focal point and the children can talk about the changes that they see over time; taking photographs will help them to compare how it was to how it is now.

It should be noted that it may take several months before it can be used, but once the materials are broken down it can be used to plant seeds with the children, so that they can see the full cycle from decay to new life.

### Extending the activity

- Set up a 'decay table' where you can place old fruit from snack time, bread or different vegetables
- Observe how they decay and the differences between how each item decays. Watching a carrot shrivel and go bendy is very different to observing a potato which may start to sprout
- Ensure that you place items such as bread in a zip lock bag to prevent children inhaling mould spores.

### NDNA products to support you with this activity

- Online course: [Little Scientists Leading the Way](#)
- Publication: [Inspiring Your Little Scientists](#)
- Publication: [Nature Play – Inspiring Outdoor Approaches.](#)