



Science  
Age 9-11

# Decomposition rates game

- Climate change
- Sustainability



Learning  
through  
Landscapes

## Previous learning required

- An understanding of what happens to rubbish when it is thrown away
- The benefit of reducing the amount of waste that ends up in landfill sites

## Learning outcomes

- To explore the time it takes for various items to decompose
- To identify positive action to reduce waste

## Equipment

- A selection of waste materials (or printed images of materials where appropriate)
- Chalk
- Measuring tape
- Camera or other way to take photos

## Activity

1. Give each pupil a waste item from the materials listed in the table opposite.
2. Draw a line of chalk along the playground and challenge the pupils to place the items along the line in order of rate of decomposition, from '1 month' at one end of the line to 'undetermined' at the other.
3. When the pupils have finished, take a photo of the line for comparison later.
4. Discuss the rate of decomposition for each item and reorganise the materials in the correct order.
5. Take another photo of the line and compare it with the pupils' original guesses.
6. For a more advanced numeracy based challenge, measure out the line to an agreed scale.

## Check for understanding

1. Ask pupils why they think there is such a difference in the rates for different materials.
2. Debate the advantages and disadvantages of single-use plastics.
3. Allow pupils to create a bar or line graph of the rates of decomposition for the materials.
4. Encourage pupils to campaign for sustainable practices at school (e.g. recycling bins in the school grounds or water bottles for all pupils) by writing letters or fundraising, for example.

Banana peel	1 month
Paper towel	1 month
Toilet roll	1 month
Newspaper	6 months
Cardboard box	2 months
Apple core	2 months
Orange peel	6 months
Milk carton	5 years
Wool	5 years
Plastic bag	20 years
Leather shoes	40 years
Polystyrene cup	50 years
Drinks can	200 years
Plastic bottle	200 years
Nappy	450 years
Glass bottle	Undetermined

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