

Hello Trees Resource Sheet



KS1 Y1 Science Diary Item

Planting Sycamore Seeds



You don't have to use every Science Diary suggestion!

You don't have to do everything on this sheet! Bits in **bold** recommended.

OBJECTIVE: PLANT OUR OWN SYCAMORE SEEDS; UNDERSTAND SEED NEEDS.

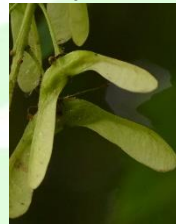
I chose sycamore because they are ubiquitous and robust.

Other tree seeds are available!

Sycamore trees are maples: *Acer pseudoplatinus*, a pseudo (imitation) plane tree.



Like plane trees, sycamores have a maple-shaped leaf and a flaky bark, but sycamore seeds are in paired wings which tells us that it is an Acer.



Sycamore seeds are in a Y shape, wings at *about* 90°
(Aide memoire: there is a y in sycamore)



Books say that sycamore seeds need 12 weeks of cold before they will germinate. We can test this!

WHAT YOU NEED

1. **Sycamore seeds**
2. **A bowl of water to soak the seeds in for 24 hours.**
3. **Waxed-card juice cartons/used plant pots /big yogurt pots.**
4. **Pebbles topped with soil/compost**
5. **Netting** (bag in which we buy citrus in a supermarket)
6. **Windowsill for indoor pots, place outdoors for outdoor pots**
7. **Diary/chart to record daily minimum temperature**



Confirm we are going to see whether we can start to grow a sycamore tree from its seeds.

WORKING SCIENTIFICALLY

✓ **Experience and observe: Examine seed and wing:** [Seed is within a wing; seed is a hard lump; wing thin, stiff, strong; some in pairs, some single, some pairs beginning to separate.]

✓ **Curiosity and questioning** (all suggestions acceptable):

Which will spin better, a pair or a single winged seed? [single: try it/!]

When the seeds are ripe will they fall as a pair? [Split and fall singly to spin further]

Which seeds most likely to germinate [ones that are ripe before they fall from the tree]

What will the seed need in order to grow? [soil, light, water, space]

When would be a good time of year to grow? [Spring: warmer, more light/longer days]

Is seed protected from rain, cold, mammals, birds, insects? [hard case, inconspicuous]

Could a seed sense when it is Spring? [warmth and daylight hours not enough (late Autumn can be same as Spring), need to sense **duration of cold** (winter come and gone)]

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How could we test what triggers sycamore seed germination?

[plant seeds in pots, keep some indoors in the warmth and light (on a windowsill), others outdoors in all weathers, observe when and in what conditions the seeds germinate (shoots emerge)]

✓ Tests to answer questions:



Leave seeds attached to their wing. Soak the seeds in cold water for 24 hours. Plant seeds in pots. Keep some indoors on a windowsill; others outdoors sheltered from direct sun and strong wind, and netted to deter rodents.

Sparingly water the seeds on the windowsill. Let rain water the outdoor pots. Note minimum temperature each day. Highlight days when temperature is $<5^{\circ}\text{C}$. Check each day to see whether shoots have emerged (germination).

PREDICT WHETHER SEEDS WILL GERMINATE

- when it is warm,
- when days are long,
- or when it is warm *after* it has been cold for as long as winter lasts.

RECORD PREDICTIONS.

On basis of when and in what conditions shoots emerge, deduce whether germination was triggered by warmth, daylight hours or warmth *after* a certain number of weeks of cold.

COMPARE RESULTS TO PREDICTIONS

x school locality:

- ✓ grow our own: **we have planted our own seeds.**
- ✓ observe changes over time: observed temperature and germination over time
- ✓ notice patterns, **compare**: we compared seeds to determine whether they were ripe.

x group and classify:

- ✓ Use secondary sources of information:



To see a video of a sycamore seed germinating search '[Acer pseudoplatanus seed germination](#)' (beware! Americans call plane trees sycamores! Use botanical name)



- ✓ **Develop scientific language:**

'Germinate' means 'begin to grow'.

A 'hypothesis' is what we predict will happen.

Seeds contain 1) an embryo 2) a supply of nutrients for the embryo 3) a seed coat.

The 'embryo' is the part of the seed that can grow into a plant/tree.

Sometimes we say 'fruit' instead of 'seed' e.g. 'winged seeds are the fruit of sycamore trees'.

- ✓ Communicate what they find: ✓ To different audiences and ✓ In different ways: **as ever**
- ✓ PLANTS ✓ Identify common trees and plants: **we can identify sycamore seeds.**

x ANIMALS another time

x EVERYDAY MATERIALS x Identify and name everyday materials

- ✓ SEASONAL CHANGES ✓ Spring is a good time for seeds to germinate
- ✓ Days will be longer and warmer in Spring

PLENARY: # Sycamore trees grow from winged seeds.

We have set up a test to see whether sycamore seeds germinate when it is warm, when days are long or when it is warm after it has been cold.