Peas in a Pod

Year 3 — Mathematics

(Maths; Yr 3, ACMSP069)
Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies

(Maths; Yr 3, ACMSP070)
Interpret and compare data displays

Peas in a Pod

Maths in the garden

When kids 'zip open' pea pods, what are the chances they'll find an odd number of peas inside? This is a fun experiment for playing around with numbers, statistics and probability. You can even cook up your maths lesson afterwards!

Equipment:

Plenty of fresh peas or beans in their pods (at least 10 per student)

Bowls, buckets, or paper towel for catching the peas

Data collection sheets (page 5)

(Optional) A recipe for cooking your maths lesson, such as a pea, mint & feta salad

Duration:

35–40 minutes

Location:

The classroom or outdoors

Teacher note:

Seasonality – this activity is best done in spring when fresh peas are in season

Notes:

Watch **The One with the Tractor**

SMELLS LIKE DIRT...

- Show students the pea or bean pods.

- Explore the pod's shape — is it symmetrical? Usually one edge of the pod is straighter than the other.

- Each pea is a seed. There's a vein that runs along the straighter edge of the pod that feeds nutrients to the row of seeds. The pod protects the seeds/ peas (a bit like a suitcase).

- Let students handle a pod and find the straighter edge where the vein exists to feed the peas.

- Encourage them to 'zip open' their pods: Start by inserting a fingernail into one side of it.

✎ Peas and Beans and Data!

- Explain the data collection sheet (provided on page 5).

- Gather students in groups of three, providing each group with at least 30 pea or bean pods, a bowl to catch the peas, and a data collection sheet.

- [?] Ask students to record the data to answer these questions:

  ◇ How many peas/beans are in each pod?

  ◇ Is a pea/bean pod more likely or less likely to have an odd number of seeds?

  ◇ Can we see any other patterns in the data?

- When each group has completed their data collection, compare the results and plot them on a bar graph. Collaborate on devising some class statements, such as 'the most common number of pea seeds in our pods was five, followed by six' and 'pods generally had an odd number of seeds.'

Biology box

Peas and beans are members of the *fabaceae* plant family, otherwise known as legumes.

The number of peas or beans in each pod depends on the type of legume — broad beans may typically have seven, while snow peas can easily have nine tiny seeds per pod.

They tend to be in odd numbers such as five, seven and nine. But nature isn't a machine, so you may find plenty of tiny dry seeds that failed to pollinate.

This could change the number you find inside. We think these little unformed guys look like tiny shrivelled party balloons!
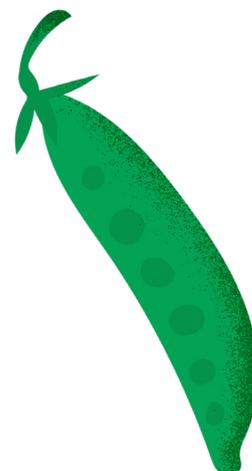
Take it Further

- Plant some seeds and grow new plants. Look at the anatomy of the shoot, seed leaves, flower, and pod formation (if your plant fruits).

- Find a recipe using fresh peas or beans and cook it together. Enjoy eating your maths lesson!

- Explore numbers (and symmetry) found in other plants. Horticulturalists divide plants by how many seed leaves they have (monocot = one seed leaf, such as grass; dicot = two seed leaves, such as beans and peas), the number of petals in their flowers, the placement of their leaves (opposite in pairs, staggered, whorl and so forth).

Give it a grow!

Once students know that each pea is a seed, they may want to plant them to grow new plants. Go for it!

Just let students know that some of the green peas we eat as a vegetable (and frozen peas) are immature seeds that probably won't grow.

A fully ready bean or pea seed is starchy and mealy (and not very pleasant to eat).

Dried beans and whole dried peas are definitely worth growing — a pea-riffic extension to this lesson!
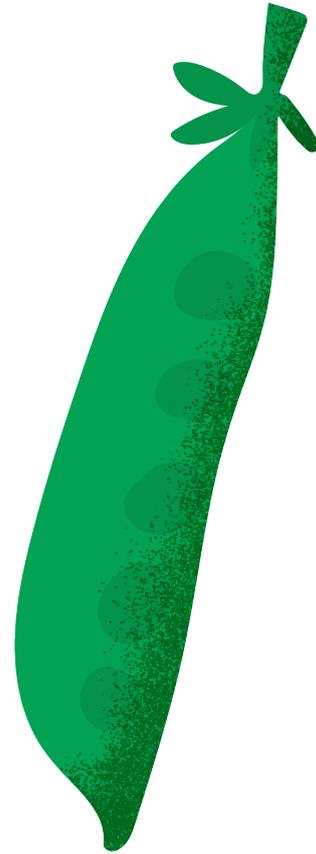
Peas in a pod!

From Alice: Have you ever heard the phrase, 'They're as alike as two peas in a pod'?

What does it mean?

Are peas in a pod always identical? Let's open a few pods and find out!

Questions before you start

◇ How many seeds do you think are in each pod?

◇ Is a pod more likely or less likely to contain an odd number of seeds?

Odd or even?	Number of seeds	Observations

Questions after you've captured your pea data

◇ What is the average number of peas in a pod?

◇ Can we see any other patterns in the data?

◇ How might shelling another bowl of peas change your results?

◇ Draw a "pea chart" (that's a pie chart, but green) to illustrate how many odd and even pea pods you discovered.

◇ If you were to shell another pod, do you think it would contain an odd or even number of peas?