

Trend Task

Seed to Pine Tree

Approach: One to one

Level: Year 4 and year 8

Focus: Account for the growth of a pine tree of immense size and weight from a small seed.

Resources: Picture of pine tree, pine tree seed, pine cone.

Questions/instructions:

Show the picture of a pine tree, the pine cone, and the pine seed.

Here is a picture of a pine tree. It started growing from a very small seed like this one, many years ago. The seed would have come out of a pine cone. The seed weighs about 1 gram. The tree probably weighs about 3000 kilograms, or 3 tonnes. Something happened to a little seed like this so it could grow into a very big tree like this. Think about what could have happened.

1. Try to explain to me where the tree got all of its extra weight from since it started off as a tiny seed.

Prompt: How did a tiny seed weighing about 1 gram become a tree that weighs about 3 tonnes?

How did it get so much heavier?

Key elements of explanation:

First, root systems and leaves develop and proceed to absorb water, gases and nutrients from air and soil. Second, photosynthesis chemically combines these into growing mass of the tree.

	% responses	
	1999 ('95) year 4	1999 ('95) year 8
clear, correct explanation	0 (0)	1 (1)
partial explanation	6 (8)	14 (20)
identifies basic source of materials only	71 (78)	68 (74)
any other response	23 (14)	17 (5)

Commentary:

Year 8 students scored only a little higher than year 4 students, and 1999 students scored slightly lower than 1995 students. Very few students gave full explanations.