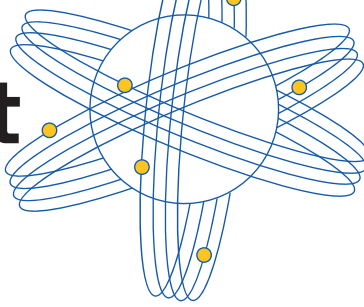


Build a Bird Nest



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In this activity we are looking at the different construction methods of bird nests and then using this knowledge to become an engineer and build our own versions.

TĪMATA! LET'S GET STARTED!

What you will need:

- **Structural Elements (the foundation)** – Twigs, small sticks, thick stems
- **Binding and Weaving (the framing)** – Long grasses, pine needles, long flexible vines, old garden string or vines
- **Lining the nest (Interior fit out)** – Moss, dry leaves, feathers, pet fur or wool
- **Optional binding** – Mud or clay (some birds use these to help anchor their nests to building structures or trees)
- **The egg** – you can use chicken eggs (ask your parents first), otherwise a golf ball, small round rocks or marbles also work well.

Instructions:

1. **Research** – Investigate how different birds make their nests, looking closely at the details; materials they use, their shape and how they keep the egg safe from predators, weather, and gravity!
2. **Design** – Sketch out a plan of how you might achieve this. How will you make the nest strong? How will you keep the egg warm and protect it from cracking? How will you keep it from rolling out?
3. **Foundation** – Intertwine and interlock long, strong materials to form your base or foundation of the nest. You may need to use your binding materials to help hold them together by weaving them through the sticks.
4. **Lining** – continue to add to the walls, making them stronger using more lining materials such as the pine needles and/or grass.
5. **Interior Fit Out** – Press in moss, wool and/or feather to create a nice cushion effect for the egg.

Purpose and Connection:

There are examples of engineering all around us—from human-made structures to those found in nature. Beavers build dams, spiders weave webs and birds construct nests, all using available materials to solve problems.

In this challenge, tamariki become engineers, using natural materials to design and build a strong, protective nest. What can we learn from nature's engineers? STEM is happening all around us!

Reflect:

- What worked well and what could you improve?
- Do you think you could build this with a beak?
- Are there other animals that you can think of that use engineering to form their homes?
- Think of how your house is constructed and what materials are used for each stage.

Extra for Experts - Testing Time!

- Place your "egg" in the nest. Now we need to test the nest's integrity
- Tilt the nest slightly does the egg roll out?
- If you place more "eggs" into the nest can it hold the extra weight?
- Lightly shake the nest to imitate wind. Does the nest hold? What about if the nest falls out of the tree and lands on soft grass/dirt, has it held together?