



Build a Better Nest Design Challenge

Grades K-2 with assistance
Grade 3-8 as independent work

Birds are amazing engineers when it comes to building nests! They design strong, unique structures to hold their eggs and young nestlings. Birds use math, science and art skills in their nest building without even realizing it. In this activity, you are challenged to be an engineer and use a variety of materials to design, build and test a nest that can hold 3 to 5 “eggs.”

Materials:

- Bird nest pictures to study (resources listed below)
- Ruler or measuring tape
- Round or oval objects to serve as “eggs” (marbles, small balls, plastic Easter eggs, rocks)
- Fan (if available)
- Watering can or spray bottle
- Paper, pencils, scissors
- A variety of miscellaneous building materials: toilet paper tubes, twine, yarn, onion bags, pipe cleaners, tissue paper, masking tape, rubber bands, egg cartons, sticks, grasses, leaves or other natural items



1. Observe different bird nests. Notice the shape, size and materials that the birds used. How are they the same? How are they different?
2. If you want to learn more about specific birds and their nests, eggs, and parenting styles see the resource list below. This may inspire your creativity!
3. Choose your materials and make a sketch of what you think your nest will look like when complete.
4. Let the nest construction begin! Remember, engineers often try a variety of materials and designs before coming up with a finished product.
5. Measure and weigh your nest and compare these measurements with bird nests you have researched.



6. TEST YOUR NEST:

- a. Is your nest big enough to hold 3 to 5 “eggs” safely?
 - b. Will your nest withstand a big wind? Set a fan on medium – high for 10 seconds to test the strength of your nest.
 - c. Take your nest outside and set it in a bush or tree.
 - d. What happens if you gently shake the branches? Is your nest sturdy and well-placed?
7. Between tests, consider modifying your design. Then retest it. That’s what engineers do!
8. Draw your nest and label the special features and test results. Then take a photo of your drawing and your nest to share with Audubon via social media.
9. Looking for a more difficult challenge? Use tape or yarn to bind your fingers together, so your hand is more like a bird beak. Now try creating a new nest.

Web Resources on birds & bird nests:

From Cornell Lab of Ornithology:

<https://celebrateurbanbirds.org/types-of-nests/>

<https://celebrateurbanbirds.org/fun-facts-and-funky-nests/>

<https://celebrateurbanbirds.org/faq/where-do-birds-nest/>

<https://celebrateurbanbirds.org/community/challenges/how-to-find-funky-nests/>

These are guides to different types of nests:

<https://nestwatch.org/learn/focal-species/>

<https://www.worldatlas.com/articles/how-many-types-of-nests-are-built-by-birds.html>

Other bird nest pictures:

<http://www.birdsandblooms.com/birding/attracting-birds/bird-nesting/8-different-bird-nests-how-spot-them/>

<https://twistedstifter.com/2011/05/25-photos-of-birds-nests-sharon-beals/>

