

# STEM Challenge:

## Build a Cliff Swallow nest

### Challenge *Can you build like a bird?*

Cliff Swallows are amazing engineers, building nests out of mud near the Columbia River each spring. Using this photo as a guide, use clay or play dough to construct a hollow, gourd-shaped nest. Use tiny blobs of clay like the birds do. Typical nests are 10 to 20 cm tall, have walls about 1 cm thick, and an opening 4 to 5 cm wide. Cliff swallows build in a spot where a wall meets a roof, so find a similar place for your construction. The inside of a box will do, as long as its sides are at least 10 cm long.



*Photo by Ken Thomas, courtesy of Wikimedia Commons*

### Technique *Stack or stagger?*

Watch this video of Cliff Swallows building a nest <https://academy.allaboutbirds.org/cliff-swallows-build-nests-from-mud>

Each time they add a blob of mud, watch how they shake their heads to push the mud into place. This helps the fresh mud fill into empty spaces and makes a stronger wall. How did they place the mud: directly on top of another blob, or a little to the side? When you build a structure with blocks or bricks, do you stagger the pieces or stack them in columns? Which makes a stronger wall? Try both and design an experiment to test the strength of each.

### Materials *What do swallows recommend?*

Cliff swallows are picky about the soil they use, finding the right mixture of sand, silt, clay, and water so they have the stickiest mud possible. Learn about how people use soil to make bricks by reading the article at <https://kids.kiddle.co/Brick>

### Learn More

People have been studying Cliff Swallows for a long time. Read about what they've learned at [cliffswallow.org](http://cliffswallow.org)

A great place to learn the basics of any bird in North America is Cornell University's [All About Birds](http://AllAboutBirds.org).