

Teaching Scientific Thought

Emma Twedt, STEM Ambassador

Activity

- ▶ 1 piece of paper per group
- ▶ Only use the tape you're given
- ▶ VHS tapes must be at least 5 cm off the ground
- ▶ 1 minute – work fast!
- ▶ There's a reward for the best design...

Background

- ▶ Junior in Biological Sciences Education at NDSU
- ▶ Career goal: teach science in a middle/high school
- ▶ 1st year as a STEM Ambassador

NDSU NORTH DAKOTA
STATE UNIVERSITY

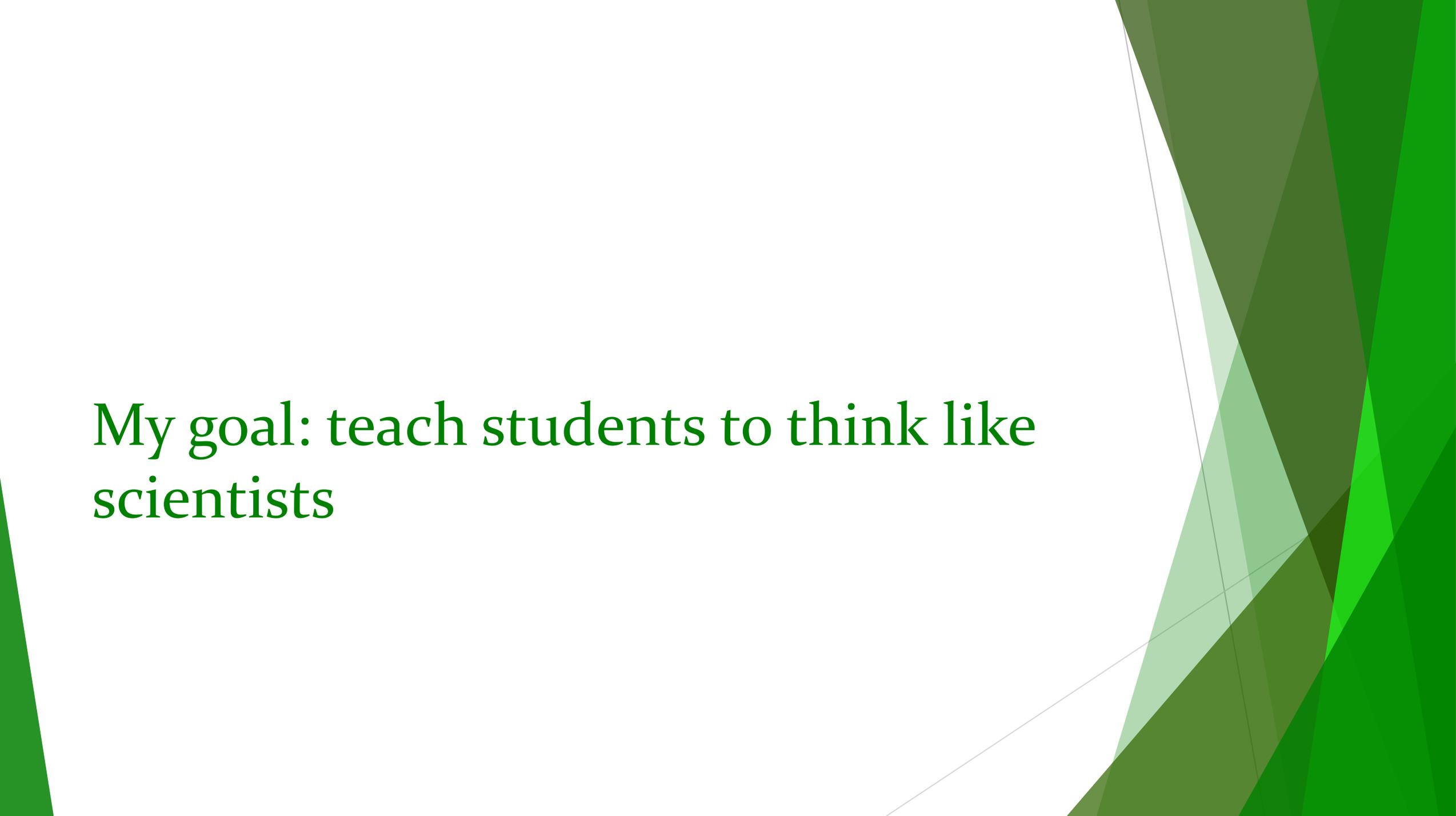
28th and 12th After School Program

- ▶ Students from Lincoln Elementary School
- ▶ Weekly science time
- ▶ Diverse student population – 40% are non-white
- ▶ Low-income student population – 48% with free/reduced lunch



What do you think of when you think
of a science classroom?

My goal: teach students to think like
scientists

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light to dark. The shapes are primarily triangles and polygons, creating a dynamic, layered effect. The colors transition from a pale, almost white-green on the left to a vibrant, saturated green on the right.

How?

- ▶ Inquiry
 - ▶ Start with a question for students to explore
- ▶ Scientific method



What does this look like?



- ▶ Ask questions about what they already know
- ▶ Ask for predictions (hypotheses)
- ▶ Ask why they think something is happening
- ▶ Ask how they know something

What does this look like?

Rewards

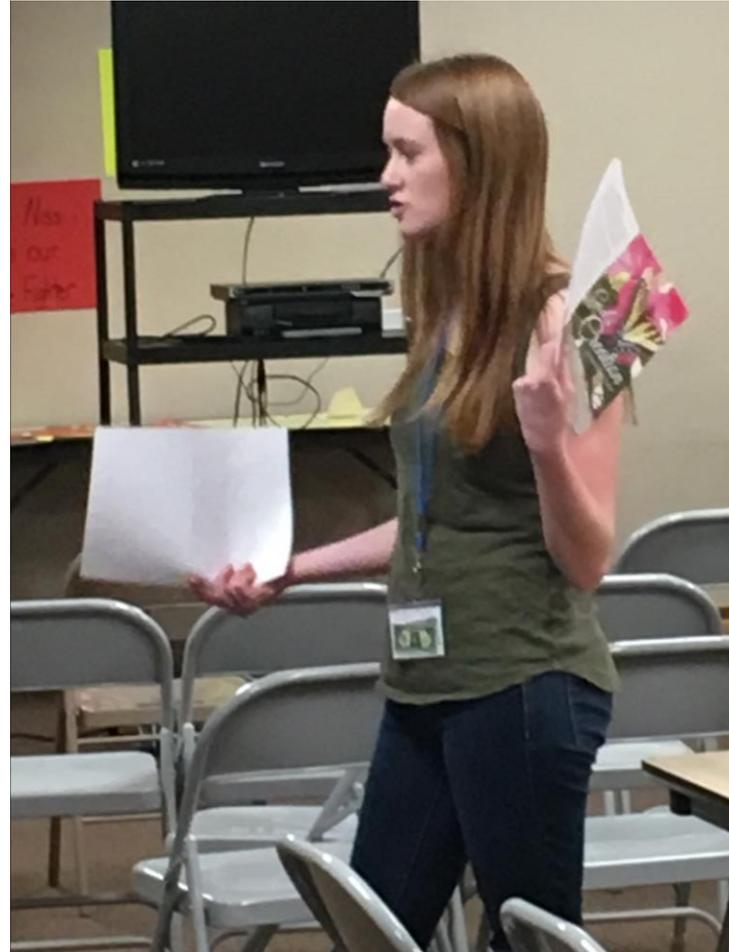
- ▶ Elementary-age students have a TON of natural curiosity about the world
- ▶ Student-guided experimentation



What does this look like?

Challenges

- ▶ Finding curriculum
- ▶ Guiding students to accurate conclusions



Why?

- ▶ In order to become good scientists, students need to think like scientists!
- ▶ Critical thinking is applicable in all areas of life!
- ▶ Students that love science will support science and maybe even pursue careers in STEM fields!

Questions & Answers

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light to dark, creating a modern and dynamic visual effect.