

Crop Circle Investigators and Creators

Materials Needed

- Large sheets of paper or poster board (one per student)
- Drawing compasses and protractors
- Pencils, erasers, and colored pencils or markers
- Rulers
- Optional: A shallow tray or box lid filled with sand, flour, or salt for a 3D model
- Optional: Small objects for creating patterns (coins, pebbles, bottle caps, LEGOs)
- Access to the internet for viewing images and short videos (teacher-curated)
- Index cards or small pieces of paper for the "Exit Ticket"

Lesson Plan (Approx. 60-75 minutes)

Part 1: The Mystery Unfolds - Introduction (15 minutes)

Learning Objectives:

- Students will formulate initial hypotheses about a mysterious phenomenon.
- Students will activate prior knowledge and express curiosity through questioning.

Activity:

1. **The Hook (5 min):** Start by showing Daniella and Alisia a few dramatic, high-quality images of complex crop circles without any explanation. Ask them questions to spark their curiosity:
 - "What do you see in these pictures?"
 - "What do you think could have made these patterns?"
 - "If you discovered this in a field tomorrow, what would be your first thought?"Listen to their initial ideas (aliens, weather, artists, etc.) without correcting them. The goal is to brainstorm all possibilities.
2. **Defining the Phenomenon (10 min):** Explain that these are called "crop circles" and they are large-scale patterns created by flattening crops like wheat or barley. Watch a short, neutral video showing the scale of crop circles from the ground and air. Then, briefly discuss the history: while some ancient accounts exist, they became famous in the 1970s.

Part 2: The Evidence - Theories and Hoaxes (20 minutes)

Learning Objectives:

- Students will be able to distinguish between scientific explanations and popular myths.
- Students will practice critical thinking by evaluating different theories.

Activity:

1. **Gathering Clues (15 min):** Present the two main categories of explanations. Frame it as an investigation where you are all detectives looking at the evidence.
 - **The Human Artist Theory:** Explain that two men, Doug Bower and Dave Chorley, came forward in 1991 claiming they had started the phenomenon as a prank. Show a short video of people demonstrating how to make crop circles using simple tools like rope, wooden planks (called "stomper boards"), and measuring tape.
Discussion prompt: "Looking at their tools, do you think it's possible for people to make

the very complex designs we saw?"

- **The Natural & Paranormal Theories:** Briefly and neutrally introduce other ideas people have. Mention these are not supported by scientific evidence but are popular parts of the mystery.
 - Strange weather phenomena (like localized wind vortexes).
 - UFOs/Aliens leaving messages.

Discussion prompt: "What makes the alien theory so exciting to people? What evidence would we need to find to prove it was aliens?"

2. **Detective's Notebook (5 min):** Have Daniella and Alisia fold a piece of paper in half. On one side, they should write "Evidence for Human Artists" and on the other, "Evidence for Other Causes." Have them jot down a few points for each side based on your discussion.

Part 3: The Creators - Design Your Own Crop Circle (25 minutes)

Learning Objectives:

- Students will apply geometric concepts (symmetry, circles, lines, angles) to create an original design.
- Students will express creativity through a hands-on, artistic project.

Activity:

1. **Blueprint Phase (10 min):** Explain that the best crop circles are based on geometry. Using their compass, protractor, and ruler, challenge them to design their own crop circle blueprint on paper. Encourage them to:
 - Start with a central circle.
 - Add more circles inside or outside of the main one.
 - Use straight lines to connect points on the circles.
 - Think about radial symmetry (where the design looks the same around a central point, like a sliced pizza).
2. **Creation Phase (15 min):** Now it's time to bring their design to life! They can choose their method:
 - **2D Method:** Finalize their drawing on the large paper, coloring in the "flattened" areas to make the design pop.
 - **3D Method:** Use the shallow tray of sand/flour. They can gently press their fingers or use small objects (like a bottle cap) to "stomp" down their design into the material, creating a miniature, tactile crop circle.

While they work, ask them about their design. Does it have a meaning? Is it a secret message or just a beautiful pattern?

Differentiation and Extension:

- **For Extra Support:** Provide stencils of circles and other geometric shapes or print out a simple crop circle design for them to color or replicate.
- **For an Extra Challenge:** Encourage them to create a design that incorporates more complex geometry, like spirals or fractal patterns. They could also write a short "news report" describing the discovery of their crop circle.

Part 4: The Great Debate & Wrap-Up (15 minutes)

Learning Objectives:

- Students will articulate and defend a point of view using the information they've learned.
- Students will summarize their learning and identify remaining questions.

Activity:

1. **Gallery Walk (5 min):** Have Daniella and Alisia present their finished crop circle designs to each other. They should explain the shapes they used and what inspired their pattern.
2. **Friendly Debate (5 min):** Ask the final question: "So, after our investigation today, what do you think is the *most likely* cause of the famous, complex crop circles? Humans with clever tools, or something else?" Ask each of them to state their opinion and give one reason from their "Detective's Notebook" to support it. Emphasize that it's okay to disagree and that the fun is in the mystery!
3. **Assessment (Exit Ticket) (5 min):** Give each student an index card. Ask them to write down two things:
 1. One new, interesting fact they learned today.
 2. One question they still have about crop circles.This helps you see what stuck with them and what they are still curious about.

Curriculum Connections:

- **Art & Math:** Geometric design, symmetry, use of tools like a compass and protractor.
- **Science:** Scientific inquiry, evaluating evidence, differentiating between a hypothesis and proven fact.
- **Language Arts & Critical Thinking:** Formulating arguments, public speaking (in the debate), and persuasive writing.
- **Social Studies:** Understanding how modern myths and phenomena spread in popular culture.