

Lesson Plan: The Power of Pictures: Deconstructing Visuals in Technical Texts

Materials Needed:

- Computer with internet access
- Access to YouTube or other educational video platforms
- Digital presentation software (like Google Slides, PowerPoint) or poster board and markers
- Digital art tool (like Canva, Procreate) or paper, pens, colored pencils
- Smartphone or camera for video/photo capture (optional)
- Simple video editing software (optional, e.g., iMovie, Clipchamp)
- Student notebook or digital document for notes
- Handout: "Visual Analysis Guide" (details in the 'Deepen' section)

Learning Objectives

By the end of this lesson, the learner will be able to:

1. **(Cognitive)** Analyze how vectors, viewpoint, technical editing, and animations are used to convey specific meaning in scientific or technical informational texts.
2. **(Psychomotor)** Create a simple informational graphic or annotated video that uses at least two distinct visual elements to clearly explain a technical process.
3. **(Affective)** Appreciate the role of intentional visual design in making complex information understandable and accessible.

Lesson Proper: EFDTT Model

Phase 1: EXPLORE (15 minutes)

Introduction: Which is Clearer?

Hook Activity:

1. Present the learner with two explanations of how a four-stroke engine works:
 - **Version A:** A dense paragraph of text describing the intake, compression, combustion, and exhaust strokes.
 - **Version B:** A simple, labeled animation or a series of four diagrams showing the same process with arrows (vectors) indicating movement.
2. **Ask guiding questions:**
 - "Which explanation was easier to understand? Why?"
 - "What did the pictures or animation show you that the words alone couldn't?"
 - "If you had to build this, which version would you want as your guide?"

Connecting to the Lesson:

"Today, we're going to become detectives for visuals. Just like the engine example, informational texts use specific visual tricks to help us understand complex ideas. We'll learn to spot these tools—like arrows, camera angles, and animations—and figure out **why** they were chosen. By the end, you'll not

only be able to analyze them but also use them yourself to teach someone else."

Phase 2: FIRM-UP (25 minutes)

Content & Guided Practice (I do, We do)

I DO: Defining the Visual Toolkit (10 mins)

Present a brief explanation of the key concepts with clear examples for each.

- **Vectors & Viewpoint:**

- **Vectors:** "These are simply arrows or lines that show direction and magnitude (how much). They answer 'which way?' and 'how strongly?'"

Example: Show a weather map with arrows indicating wind direction and speed. Show a physics diagram with force vectors on an object.

- **Viewpoint:** "This is the 'camera angle' of a diagram. It dramatically changes what we see and understand."

Example: Show a picture of a phone (external view) versus an "exploded view" diagram of its parts (internal view). Show a building from the ground versus a top-down blueprint.

- **Technical Editing:**

- "This is how creators refine visuals for maximum clarity. It's not just about making it pretty; it's about making it understandable."

Examples: Show a diagram before and after technical editing—adding labels, color-coding related parts, using call-out boxes to magnify a detail, or using slow-motion in a video to emphasize a crucial step.

- **Animations:**

- "Animations are visuals that move. They are perfect for showing processes, changes over time, or cause-and-effect relationships that are hard to capture in a single picture."

Example: Show a short animation of the water cycle or blood circulating through the heart.

WE DO: Shared Analysis (15 mins)

1. Watch a short (2-3 minute) educational video together from a source known for excellent visuals (e.g., Kurzgesagt, SmarterEveryDay, TED-Ed).
2. Watch it once all the way through. Then, watch it again, pausing to identify the visual tools in action.
3. **Use guiding prompts:**
 - "Pause! Look at those arrows. What are they telling us? (Vector)"
 - "Why do you think they showed the machine from this angle? What would we miss from a different view? (Viewpoint)"
 - "Notice how they used color to separate the two systems. Why is that helpful? (Technical Editing)"
 - "Could this concept have been explained as well with just a static picture? What does the movement add? (Animation)"
4. **Formative Assessment:** The learner's ability to identify and explain the purpose of these elements during the shared analysis serves as a check for understanding.

Phase 3: DEEPEN (20 minutes)

Independent Practice (You do)

Activity: Visual Detective

1. Provide the learner with a choice of one of the following to analyze:
 - An infographic about a technical subject (e.g., "How a COVID-19 Test Works").
 - A short instructional video (e.g., "How to Change a Bike Tire").
 - A chapter from a science or math textbook with several diagrams.
2. Give them the "Visual Analysis Guide" handout (or have them create a similar chart in their notebook).

Visual Analysis Guide:

Visual Tool	Describe an Example You Found	What was the Intended Meaning or Purpose?
Vector / Arrow		
Viewpoint		
Technical Editing (Label, color, etc.)		
Animation (if applicable)		

3. The learner independently completes the guide, examining their chosen text for examples of each visual tool and analyzing its purpose.

Differentiation:

- **Scaffolding:** Provide a text with very obvious visual elements. Complete the first row of the analysis guide together.
- **Extension:** Ask the learner to find a *poorly* designed visual and explain how they would improve it using the principles discussed.

Phase 4: TRANSFER (30-45 minutes)

Application & Summative Assessment

Project: You're the Teacher!

The Challenge: "Your mission is to explain a simple process or concept to someone younger or someone who knows nothing about it. You must use visual tools to make your explanation as clear as possible."

Instructions:

1. Choose a topic. Examples:
 - How to tie a specific knot
 - The life cycle of a butterfly
 - How solar panels generate electricity
 - The rules of a simple card game
2. Choose your format:
 - **Option A: Infographic.** A one-page digital or hand-drawn visual guide.
 - **Option B: Annotated Video.** A short (30-60 second) video where you point to and explain steps, adding on-screen text or arrows later.
3. **Create your explanation.** You must intentionally include **at least two** of the visual elements we learned about (e.g., use vectors to show movement, choose a specific viewpoint like a close-up, and use clear labels).
4. Present your creation and explain your design choices. "I used these arrows to show..." "I chose a top-down view so that..."

Summative Assessment & Success Criteria:

The project will be evaluated based on the following criteria, which directly align with the learning objectives:

- **Clarity (Cognitive/Affective):** Is the explanation clear, logical, and easy for the target audience to understand?
- **Intentional Use of Tools (Psychomotor):** Does the project effectively use at least two distinct visual tools (vectors, viewpoint, editing, animation)?
- **Justification (Cognitive):** Can the learner explain *why* they made their specific visual design choices?

Conclusion & Recap (5 minutes)

Discussion & Reflection:

- "Let's look back at the engine example from the beginning. What visual tools do you see in it now that you didn't notice before?"
- "What was the most powerful visual tool you analyzed or used today? Why?"
- "From now on, when you see a diagram or an educational video, what will you be looking for?"

Reinforce Takeaway: "Today we learned that visuals in informational texts aren't just decoration; they are powerful, deliberate tools. By understanding vectors, viewpoint, editing, and animation, we can better understand the world around us and become clearer communicators ourselves."