Intro – Description of lesson, rationale, setting/context:

In this lesson, students will read an informational text and demonstrate understanding of content, as well as how diagrams and images contribute to an understanding of the text. (Students can also be challenged to compare text with video, analyze the text to identify audience and purpose or identify strengths and weaknesses of structure, format/readability and language).

Grade level: Elementary K – 5

Common Core Standards:

- CCSS.ELA-LITERACY.RI.4.1
  Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

- CCSS.ELA-LITERACY.RI.4.2
  Determine the main idea of a text and explain how it is supported by key details; summarize the text.

- CCSS.ELA-LITERACY.RI.4.3
  Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

- CCSS.ELA-LITERACY.RI.4.7
  Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

Objectives: Students will read and demonstrate understanding of the content of an informational text.

Materials: 3x3 Rubik’s Cube, Solution guides, videos, lined paper

Optional reading: *Mistakes That Worked, 40 Familiar Inventions and How They Came to Be* by Charlotte Foltz Jones
Procedure:

Before class:
* Familiarize yourself with the solution guide and videos for learning to solve the Rubik’s Cube.
* Make copies of support materials (learn to solve checklist, Cube orientation mat, etc.) as needed.

With students:

1. Document the unsolved cubes.
   - Students will familiarize themselves with how the cubes move, etc. by scrambling the cubes.
   - Students will document their unsolved cubes. They may choose to take a photo or write down their observations of one face - locations of each colored tile etc.

2. Students will read and follow the guide to solve the Rubik’s Cube.
   - Students will read the solution guide, follow the steps, and analyze how the diagrams and images support their understanding of what the text is explaining.
   - Students will choose one page/section with diagrams to explain in their own words how the images/diagrams support what the text.

3. Document that the cube has been solved.
   - Students will take a photo OR
   - Students will write down their description of the solved cube - what colored faces are opposite each other? What colored faces are adjacent? This will serve as proof that the students were able to follow and understand an informational text.
Notes to Teacher: Technology Connection:

Videos of the steps in solving are available on our website:
http://www.youcandothecube.com/solve-the-cube/

Optional Follow Up / Extend the Lesson:

Have students analyze the solution guide:

- Identify the target age group and purpose for the solution guide. Use examples from the guide (language, illustrations, graphics, layout, etc.) to support their analysis.
- Create their own guide. How would they lay out a guide to be more effective? Explain their rationale.

Compare/contrast the solution guide videos to the informational text:

- Which was more beneficial for them? Explain.
- How do both video and text work together to explain the steps of solving the Rubik’s Cube? Explain using examples from the text and video to support their explanation.

Optional Assignment for students not ready to solve the 3x3 Rubik’s Cube:

Students can be directed to the 2x2 Rubik’s Cube and solution guide. The ELA Common Core Standards are still covered.