

Lights, Camera, MEDIA Literacy!  
Lesson Plan # 27

**Topics:**

**Journal Writing**  
**How Electronic Television Works**  
**Television and the Human Brain**  
**Studio Hand Signals**  
**Television Game Show Pre-Production**

**Outcomes:**

Students will follow organizational procedures.  
Students will see, hear, and use applicable vocabulary.  
Students will determine how an electronic television operates.  
Students will state three functions of the human brain necessary in order for us to enjoy television.  
Students will collaborate on the pre-production of a television show.  
Students will demonstrate accurate use of studio hand signals.

**Materials:**

Writing journals  
LCD projector  
Chart paper  
Post-its  
3 x 5 File cards (10 per student)  
Individual student pocket folders  
**School Television Studio** (or camcorders and computers with editing software)

**HANDOUTS: How Electronic Television Works**  
**Studio Hand Signals**

**DVD: *FILM FRENZY 2***

**New Vocabulary:** anode, cathode, filament, vacuum, phosphor, voltages, radiation

## Sequence of Events:

### **I. Journal Writing (15)**

1. Prompt:

What are your feelings about Philo T. Farnsworth?

### **II. How Television Works (35)**

1. To understand how Philo T. Farnsworth's electronic television works, show students the following 2-minute clip.

**(Move the slider to begin at 10:00 and end at 12:00.)**

*The Secret Life of Machines: Television 1988*

<http://www.youtube.com/watch?v=uD8d1r52IWg>

2. Guide students step-by-step through the handout that explains the way electronic television works. Students might guess the missing words as a class and then fill in the blanks on the handout with the correct answers.

#### **HANDOUT: How Electronic Television Works**

3. Students can more clearly understand the scanning by watching another 2-minute animated explanation.

**(Do not start this film at the beginning. Instead, move the slider to begin at 5:40 and watch until 7:40...**

*Note: This is a 1956 RCA-biased presentation.)*

<http://www.youtube.com/watch?v=9A7MN4TjC2Q&feature=related>

### **III. Television Works with the Human Brain (20)**

1. Inform students that the success of the electronic television relied on three functions of the human brain.

The first is **Persistence of Vision**.

Ask students why this would be important.

*(Students learned about Persistence of Vision in the film unit and should realize that the scanned images must create the illusion of movement.)*

2. The second brain function has to do with the **Scanning Rate...also called the Flicker Frequency**...At what speed will we not notice the back and forth scanning?

Have students guess how often the entire electronic television screen...usually 480 horizontal lines... is scanned per second?

**The answer: 60 times per second**

*(50 -60 times is required for our brains to not notice.)*

3. The third brain function is **Image Assemblage**.

Students should be at a distance from where you will be showing the close-up pixilated image in the middle of this webpage : <http://electronics.howstuffworks.com/tv1.htm>

*(Suggestion: Print out this image ahead of time.)*

Ask students what they see. All will say a baby or toddler. Allow them to get close to the image. Explain that our brain assembles and interprets pixels into meaningful images.

4. Review with students the three brain functions presented. Ask students which of the three functions most likely presented Farnsworth with the need to keep adjusting his invention until he got it just right? (scanning speed)

#### **IV. Creating a Television Show (115)**

1. Show students the second episode of the student game show.

*Note: "Paparazzi Attack" does not need to be in their show.*

**DVD: FILM FRENZY (show 2)**

2. Ask students what questions they might have about how the show was created. Clear up any confusion.
3. Tell students that they will continue their pre-production work and when they finish, they will be able to try out some of the studio equipment and roles. They should also practice the hand signals they are about to learn. These are the signals that the floor manager uses during the live production.

**HANDOUT: Studio Hand Signals**

4. Introduce and practice the hand signals as a class.
5. Students work on pre-production work, as instructed.

**V. Reflection (15)**

1. Direct students to the hanging chart paper labeled:

**What did you learn about how electronic television works?**

2. Hand out Post-its on which students write and post.
3. Review the comments on the Post-Its with the class, so students have a sense of what was learned. Make sure to clear up any misconceptions.