

# " HOW' D THEY DO THAT?"

ITV SERIES

NOVA: "Behind the Scenes with King Kong in Special Effects"

GRADES 7-9

## PREVIEWING ACTIVITIES

"Today we are going to talk about how special effects are made in movies, and then you are going to design your own visual illusion."

"Who has been to Universal Studios and can tell me some special effects 'secrets' that you saw?" Discuss student answers.

"Alright, now that we're thinking about special effects, let's make a list of all of the movie monsters that we can remember. I'll start you off with Godzilla. . ." As students tell you monsters, write them on the board. Get as many as you can so that students are able to get a mental picture of monsters before you watch the King Kong video.

"Today we are going to talk about King Kong. Who has seen a King Kong movie? What do you remember about him?" Discuss comments to generate interest.

"How big do you think he really is? How big does he look on the screen compared to the people in the movie? What do you think the special effects people do to make him move and look so big?" Discuss answers but do not give exact answers here; wait until the video uncovers the answers.

To illustrate how frame by frame animation works have the students make miniature flip books. Have each student cut out at least 30 squares of typing paper (3"x3") and have them staple the squares together at one corner. Explain to the students that they are to draw the action of a growing plant or flower. On each square the students should draw the plant in the same place, yet the plant should be slowly unfolding as each square is used. On the 30th square the plant should be in an upright position.

Now comes the fun part. The student are to hold their squares on the staple and quickly thumb through the squares watching the animation unfold. Next, have the students trade booklets with other students to compare their animation.

"Now we are going to watch portions of a video that explain how King Kong special effects were made. As we watch, look for explanations of why the buildings look so big and listen for all of the different jobs there are in special effects."

## OVERVIEW

The following is one lesson from a unit on special effects. This particular lesson takes students behind the scenes of special effects using both math and science while focusing on the use of scale to create a visual illusion. Students will design their own building to a specific scale model. As the students watch the video they will also be able to identify different career positions in the the field of special effects for movies.

This video may also be used to illustrate animation of clay figures and monsters and the use of sound to create additional special effects.

## LEARNING OBJECTIVES

Students should be able to:

- Define scale.
- Identify careers in the field of special effects.
- Design and draw a building to a specific scale.
- Explain how visual illusions work in special effects.
- Define the key to special effects.

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## MATERIALS

### Previewing Activities:

- typing paper for 30 3"x3" squares (per student)
- stapler
- pencil (per student)

### Post Viewing Activities:

- 1 vocabulary overhead
- 2 sheets of graph paper per person (one inch)
- 1 ruler per student
- pictures of all sorts of buildings from magazines (10-15 total pictures)
- assorted colored pencils, markers and crayons
- several calculators to pass around to help with calculations

## FOCUS FOR VIEWING

To give the students a specific responsibility while viewing: students will raise their hand when they hear a definition for scale; students will raise their hand when they see or hear a special effect; students will raise their hand when they can identify a job title in the area of special effects.

*Note: Because students are given the responsibility to identify jobs, special effects and a definition, they should dictate when the video is to be paused.*

## VIEWING ACTIVITIES

**START THE VIDEO** at the very beginning of the tape. (There is no wasted time at the beginning with advertisements, credits, music, etc.)

**PAUSE** the video on the picture of the producer. Ask the students what they think a producer does in a movie. (Explain that the producer is in charge of getting financial support and coordinates all activities to complete the movie.) **RESUME THE VIDEO.**

**PAUSE** the video on the director. Ask the students what the difference is between a producer and the director. (A director plans and supervises all the employees and makes final decisions about the movie.) Continue the discussion by asking the students which job they would like the most and why. Ask the students which job would be most rewarding and/or demanding. **RESUME THE VIDEO.**

**PAUSE THE VIDEO** when the director says, "Length not height. . ." Discuss how the look of dropping is accomplished. (The answer is that a camera rolls along the floor and does not drop alongside a tall building.) **RESUME THE VIDEO.**

**PAUSE THE VIDEO** when the director explains. . . "Take a picture frame by frame; move the object a little, take another picture." Discuss the method of flip books and discuss the amount of time it takes to include lots of detail. **RESUME THE VIDEO.**

**PAUSE THE VIDEO** on "1/24 scale." Ask students what this means. (The buildings that were made for this movie are 1/24 the size of a regular building.) Make sure that students understand this idea because the activity for this lesson relates to this concept. **RESUME THE VIDEO.**

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## VIEWING ACTIVITIES (continued)

**PAUSE THE VIDEO** on the special effects director. Ask the students what his job entails. (He oversees all of the effects and makes sure that all of the effects are working and that they produce an illusion of some sort.) **RESUME THE VIDEO.**

**PAUSE THE VIDEO** on the answer to the question of what is the key to special effects. "The whole idea is to fool your eye into thinking something is there." Lead a discussion on special effects that the students have seen in movies. Ask which effects seemed most real and what made them appear larger than life. **RESUME THE VIDEO.**

**PAUSE THE VIDEO** on the animator. Ask the students how he animates King Kong. (Through a process called stop motion where one frame at a time is filmed.) Ask the students how many frames it took to animate Kong's waving arm and why. (17 frames because of so much detail.) **RESUME THE VIDEO.**

**PAUSE THE VIDEO** after the crew watches their 8 seconds of completed video. Discuss with the students how it looks, what's missing (sound) and have them guess at the number of hours it took to produce those 8 seconds of animation. (26 hours) Discuss the amount of dedication and hard work. **FAST FORWARD THE VIDEO** to the picture of the fire in the building.

**PAUSE THE VIDEO** after the explanation of the optical printer is given. Discuss with the students the process of putting the film of the fire over the film of the building. Discuss the duties of the optical supervisor. (To oversee all of the visual effects.) **RESUME THE VIDEO.**

**PAUSE THE VIDEO** on the sound supervisor to discuss his work with sound. Let the students watch and listen as he adds bullet sounds and roaring to the film track. **FAST FORWARD THE VIDEO** to where the crowd is looking up and screaming.

**PAUSE THE VIDEO** after King Kong falls onto the net. Because this is the conclusion to the three-minute animated film, discuss with the students which parts looked real and what would they do differently. **REWIND THE VIDEO** to the screaming crowd and play the ending one more time to let the students see all of the special effects put together. **STOP THE VIDEO.**



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## ACTION PLAN

Visit an architect's office to see samples of scale models.

Invite a guest speaker from a graphic arts department to discuss the use of scale.

Invite a speaker from a video production company to discuss the process used to make a video or commercial.

Write a letter to a movie studio asking for information about special effects "secrets."

Watch a special effects video/movie such as "Wallace and Grommit," "The Making of Grimm Movies" or any of the "King Kong" or "Godzilla" movies to point out different special effects as they are happening.

Visit the NOVA web site at <http://www.pbs.org/wgbh/pages/nova/>

## POST VIEWING ACTIVITIES

"Now that you've watched the experts create special effects and you've been able to look behind the scenes of King Kong it is time to create a few effects of our own."

"Before we make our own effects, take out a piece of paper to copy down the vocabulary terms from the video. The definitions should look very familiar because we just discussed them as we watched the video." As the students copy the notes, discuss each and review information from the video.

"Let's begin our own special effects by designing a building to scale. Who can give me the definition of scale? Where else would you need to know how to scale something down?"

(Copying artwork, designing house plans, basically before building anything.)

"Take out a piece of paper and a pencil with a good eraser because you are going to design a building of any kind that is at least three stories high. Your building can be an office, school, hospital, apartment, bank, etc. On your piece of paper I want you to sketch your building. This is just a rough draft, so play around with different ideas until you create the right building for you."

Walk around to get some students on the right track. Make sure each student's building is tall enough to fit the three-story requirement. Have on hand sample pictures of buildings from magazines to use as examples.

"Ok, now it's time to add measurements. Take out your ruler and decide how tall your building would be if it was actually built. Remember that our room has ten-foot ceilings, so if your building has at least three stories and a roof, approximately how tall is your building?" Let the students work on figuring out how tall their building is.

"Now that you have your total height, you need to figure how tall your building will be on a 1/48 scale. Remember that means you will be drawing your building on graph paper to be 1/48 the actual size. So, take your total height and divide it by 48."

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### POST VIEWING ACTIVITIES (continued)

"For example, if your building is 8 feet tall, divide that by 48 to get 1/6 ft or 2 inches. So, for every 8 feet of actual building, I would draw 2 inches on my graph paper. Now, you try to figure out your total." At this time the students will probably need some guidance to help with their calculations.

"Once you know your scale figures you may begin transferring your building sketch to your one inch graph paper. Add detail and color and I will display all of the buildings once they are finished." Continue to walk around to help the students and to give suggestions where necessary.

Finally, remind the students that if they were working on a special effects movie, their drawings would be turned over to the model shop supervisor to begin creating the building out of wood and plastic materials to be used for the visual effect. Discuss the amount of time and effort and teamwork that it takes to produce special effects.

Collect the drawings and display them around the classroom.

### EXTENSIONS

Science and Art: Make model monsters out of modeling clay to a certain scale and then animate them using the stop motion method.

Music: Create a sound track to go along with any animated film. (Turn the sound off of the original movie.)

Technology: Use a camcorder to animate any object.

Careers/Technology: Use E-mail to ask film makers about their job descriptions.

Theatre Arts: Write a script for a short video. Use an existing video, but turn the volume off and re-write the script.

### VIDEO AVAILABLE FROM

"Behind the Scenes with King Kong in Special Effects" may be purchased for \$19.95 plus \$3.95 Shipping and Handling, from WGBG Video  
P.O. Box 2284-9040,  
South Burlington, VT, 05407-2284,  
phone 1-800-255-9242 ext 9040,  
FAX 1-802-864-9846 Dept. 9040.



" HOW' D THEY  
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OVERHEAD

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## PEOPLE IN SPECIAL EFFECTS

- **PRODUCER** is in charge of getting financial support and coordinates all activities to complete the movie.
- **DIRECTOR** plans and supervises all of the employees and makes final decisions about the movie.
- **SPECIAL EFFECTS DIRECTOR** oversees all of the effects and makes sure that all of the effects are working and that they produce an illusion of some sort.
- **OPTICAL SUPERVISOR** oversees all of the visual effects.
- **ANIMATOR** uses stop motion to film animated scenes.