



AMERICAN PRIDE LASER SPECTACULAR TEACHER GUIDES

Dear Assembly Coordinator and Teachers,

The following pages contain teacher guides to be used in conjunction with Prismatic Magic's American Pride Laser Spectacular assembly and the American Pride Student Worksheet Masters located on Prismatic Magic's Web site.

The teacher guides provide additional information about the laser show. They give ideas and suggestions for ways to tie the assembly into the curriculum for specific grade level ranges but you may use ideas from any age group you would like. All ideas are suggestions and may be used as deemed appropriate by individual teachers.

Sincerely,

Your Friends at Prismatic Magic



TEACHER GUIDE
GRADES K - 2

AMERICAN PRIDE LASER SPECTACULAR

To increase the educational aspect of the laser program, this guide is to be used AFTER the performance.

Language Skills

Parts of Speech

Make a list of as many adjectives the students can think of to describe the show. If they haven't learned about adjectives yet, ask them how they would describe the show or the lasers or the performance. Make a list of all the nouns they saw during the performance in person or on the screen. What happened during the show? Make a list of verbs. How did those things happen? Make a list of adverbs. Have a contest to see which student or group of students can come up with the most adjectives, nouns, verbs, or adverbs.

Writing

Write about what happened during the performance. What was their favorite part? What did they like or dislike? What would they have changed? What songs would they have added or taken out? Depending on the students' writing level, have them write a sentence, a paragraph, or a story about the show. Or have them draw a picture and dictate a sentence or paragraph about what they drew.

Math

Graphing

Many bar graphs can be constructed about the performance. Choose a few songs from the performance and graph the popularity of each one. Which part of the show was the most popular - the music or the laser images? Graph it and find out.

Basic Math Facts

Make up some simple stories about the laser show that can be used to teach basic math facts. Examples:

- The American flag was shown 2 times in one song and 3 times in another. So what was the total number of times the flag appeared in the show?
- Three children in 2nd grade sang to *America the Beautiful*. Two children in 1st grade did not. How many more children sang to *America the Beautiful* than did not?
- Three classes watched the show. Two children in each class clapped along with every song. How many children clapped with every song?

Art

Art Skills

Have the students draw a picture of their favorite part of the performance. They can also decide what they would like to include in a laser show and draw that. Or have them think of their favorite song and draw a laser scene from it. Listen to music and have students picture how they could create the music visually. Then have them create it. The movies *Fantasia* and *Fantasia 2000* are excellent examples of this.

Laser Show Painting

This is a fun way to create a picture that looks like a laser show.

Materials needed:

White piece of 9"x12" construction paper

Piece of string about 24" long

Container of paint

Heavy book, dimensions of the cover larger than 6"x9"

1. Fold the paper in half so each half measures 6"x9".
2. Open the paper and lay it flat.
3. Dip the string in the paint, leaving one end dry so you can hold onto it.
4. Lay the string in a curved design without overlapping itself on one half of the paper.
5. The end of the string should hang out the bottom of the paper.
6. Refold the paper, making sure the end of the string is still hanging out of the paper.
7. Place the heavy book on the folded paper.
8. Pull on the end of the string until the entire string is out of the paper.
9. Open the paper and look at your laser show!

You should see a heavy line of paint where the string was placed which represents the laser image seen on the screen. You should also see faint smears of paint coming from the heavy line where the string was pulled out of the paper. This represents the lasers going through smoke so you can see the laser beams. You may want to try this before doing it with the students to make sure you get the proper length of string, amount of paint on the string, that the book is heavy enough, etc. The process can be repeated with a second color or even a third to make a more complex design.

Create a Flag

Show the students flags from various states and countries. Talk about symbols on the flags – stars represent states, etc. Let them design and color their own flag.

Your ideas

Go ahead and draw on your knowledge and skills to come up with any other activities. Relate the lasers to something you are teaching in any subject. Who better to come up with activities than you – the teacher!!



TEACHER GUIDE
GRADES 3 - 5

AMERICAN PRIDE LASER SPECTACULAR

To increase the educational aspect of the laser program ,this guide is to be used AFTER the performance.

Language Skills

Parts of Speech

Make a list of as many adjectives the students can think of to describe the show. Make a list of all the nouns they saw during the performance in person or on the screen. What happened during the show? Make a list of verbs. How did those things happen? Make a list of adverbs.

Writing

Write about what happened during the performance. What was their favorite part? What did they like or dislike? What would they have changed? What songs would they have added or taken out? Have the students write an informative article about the performance, an advertisement or brochure for the performance, a critique of the show, a persuasive argument for or against this assembly, etc. Have the students come up with a theme for their own laser show. What would it be? What songs would go with their theme?

Word Puzzles

Give the students graph paper and let them create word searches, crossword puzzles, codes, etc., using patriotic words or phrases. Then let them trade puzzles with other students to see if they can solve them. As a class, create a giant puzzle on a piece of butcher paper and share it with another class.

How Many Words?

Write an American themed word on the board. How many words can the students come up with using only those letters?

Example word: *America*

Words from *America*: *car, mar, are, ram, air, care, race, rice, mice, cram, mare, . . .*

Math

Graphing

Many bar graphs can be constructed about the performance. Choose a few songs from the performance and graph the popularity of each one. Which part of the show was the most popular - the music or the laser images? Graph it and find out.

Distance to the moon

Lasers have been used to measure the distance from the earth to the moon. Can the students figure out that approximate distance with a few pieces of information? Speed of light, including lasers = approx. 186,000 miles per second. Time it takes a laser to travel to the moon, reflect off a mirror, and return to the earth = about 4 seconds.

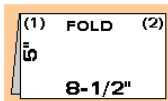
$186,000 \text{ miles per second} \times 4 \text{ seconds} = 744,000 \text{ miles}$. That number must be divided by 2 since the laser is traveling to the moon and back. That means the moon is about 372,000 miles from the earth.

Art and Music

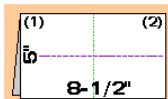
Five-Pointed Star

The story goes that George Washington went to Betsy Ross with a design for the first American flag using 6-pointed stars. Betsy Ross thought 5-pointed stars would look better. Washington believed it would be too time consuming to create a lot of 5-pointed stars. Betsy Ross grabbed a piece of fabric, folded it expertly, made one cut, and opened the fabric to reveal a perfect 5-pointed star. Washington was amazed and decided to use 5-pointed stars like we use today. But how did Betsy Ross do that? It is kind of tricky to fold the paper just right, but if you can do it and teach it to the students, it is worth it. You might not want to tell them what shape they will be making – just teach them how to fold the paper, make the cut, and watch their surprise...

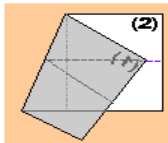
Thanks to the Betsy Ross House for providing these instructions.
<http://www.ushistory.org/betsy/flagstar.html>



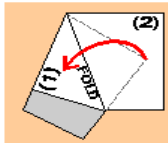
Step 1. Fold an 8-1/2" x 10" piece of paper in half.



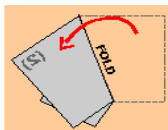
Step 2. Fold and unfold in half both ways to form creased center lines. (Note: be sure paper is still folded in half.)



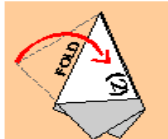
Step 3. Bring corner (1) right to meet the center line. Be sure to fold from the vertical crease line.



Step 4. Bring corner (1) left till edges coincide, then make the fold.



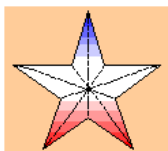
Step 5. Bring corner (2) left and fold.



Step 6. Bring corner (2) right until edges coincide. Then fold.



Step 7. Cut on the angle as shown in the picture. Then unfold the small piece.



Step 8. Marvel at your perfect (we hope!) 5-pointed star! If your star is not perfect, take a fresh piece of paper (8-1/2" x 10" — not 8-1/2" x 11") and [return to Step 1](#).

Art skills with music

Have the students draw a picture of their favorite part of the performance. They can also decide what they would like to include in a laser show and draw that. Or have them think of their favorite song and draw a laser scene from it. Listen to music and have students picture how they could create the music visually. Then have them create it. The movies *Fantasia* and *Fantasia 2000* are excellent examples of this. To make it more interesting, only let the students use the primary colors of paint – red, yellow, and blue – to create their pictures. Let them mix colors as needed.

Laser show painting

This is a fun way to create a picture that looks like a laser show.

Materials needed:

- White piece of 9"x12" construction paper
- Piece of string about 24" long
- Container of paint
- Heavy book, dimensions of the cover larger than 6"x9"

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Design a flag or monument

Show the students flags and monuments from around the world and discuss the symbolism behind them. For example – The stars on the American flag represent the 50 states, the stripes represent the 13 colonies, etc. The Statue of Liberty's torch represents the light of freedom shining to the world and the seven spikes on her crown represent the seven continents. Let the students design their own flag for a fictional country or even a new one for our country. How would they represent the ideals of our country on a flag? Or let the students design a monument celebrating our country or a significant historical event. Again, how would they represent that event symbolically?

Geography

Monuments and maps

Do the students know where the most famous American landmarks and monuments are located? See if they can find them on a map. (Also see the included worksheet on this subject.) Why are most of the patriotic landmarks and monuments in the eastern half of the country? Do they know where other landmarks are in the country? Send them on a scavenger hunt around the country finding them or discovering new ones they didn't already know about.

Your ideas

Go ahead and draw on your knowledge and skills to come up with any other activities. Relate the lasers to something you are teaching in any subject. Who better to come up with activities than you – the teacher!!



TEACHER GUIDE
GRADES 6 - 8

AMERICAN PRIDE LASER SPECTACULAR

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Language Skills

Parts of Speech

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Writing

Write about what happened during the performance. What was their favorite part? What did they like or dislike? What would they have changed? What songs would they have added or taken out? Have the students write an informative article about the performance, an advertisement or brochure for the performance, a critique of the show, a persuasive argument for or against this assembly, etc. Have the students come up with a theme for their own laser show. What would it be? What songs would go with their theme?

Word Puzzles

Give the students graph paper and let them create word searches, crossword puzzles, codes, etc., using patriotic words or phrases. Then let them trade puzzles with other students to see if they can solve them. As a class, create a giant puzzle on a piece of butcher paper and share it with another class.

How Many Words?

Write an American themed word on the board. How many words can the students come up with using only those letters?

Example word: America

Words from America: car, mar, are, ram, air, care, race, rice, mice, cram, mare, came, cream, . . .

Math

Distance to the moon

Lasers have been used to measure the distance from the earth to the moon. Can the students figure out that approximate distance with a few pieces of information? Speed of light, including lasers = approx. 186,000 miles per second. Time it takes a laser to travel to the moon, reflect off a mirror, and return to the earth = about 4 seconds. $186,000 \text{ miles per second} \times 4 \text{ seconds} = 744,000 \text{ miles}$. That number must be divided by 2 since the laser is traveling to the moon and back. That means the moon is about 372,000 miles from the earth.

Science

Reflection

Reflection is what makes the lasers move around during the laser show. A fun way to learn about reflection of light is to gather several small mirrors and a flashlight. Cover the flashlight with an opaque material with a small hole in it. This will allow only a small beam of light to shine from the flashlight. Have the students try to hit a target with the beam of light. The trick is that they have to reflect the light off of one or more mirrors before hitting the target. How many mirrors can they use and still hit the target? This can be done as a class or in small groups. Throw some math into the mix by having the students measure and calculate angles. Have them plan out a path for the light beam using precise angles and draw it on a piece of paper. Then let them set it up in the classroom and try it. Did they calculate the angles correctly?

History

Laser History

What do the students know about lasers? Who invented lasers? When were lasers invented? What else are they used for? Let them get on the Internet and search away! Have the students write a paragraph or make a poster about another use of lasers or a laser scientist.

Art and Music

Art skills with music

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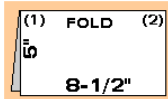
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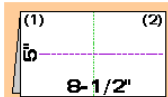
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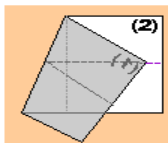
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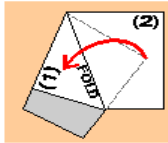
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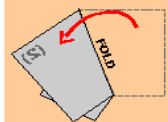
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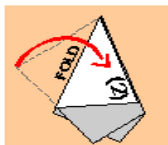
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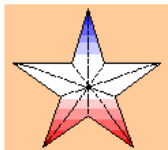
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These instructions with larger pictures can be found at:
<http://www.ushistory.org/betsy/flagstar.html>

Geography

Monuments and maps

Do the students know where the most famous American landmarks and monuments are located? See if they can find them on a map. (Also see the included worksheet on this subject.) Why are most of the patriotic landmarks and monuments in the eastern half of the country? Do they know where other landmarks are in the country? Send them on a scavenger hunt around the country finding them or discovering new ones they didn't already know about.

Safety

Precautions

We take every necessary precaution to ensure everyone's safety during the show. It is not safe to shine any kind of laser directly into the eyes. Permanent damage may result. It is wise not to allow a laser to shine directly on any part of the body either as harmful radiation is emitted from a laser. You may want to emphasize that if lasers are used safely, they can be fun.

Your ideas

Go ahead and draw on your knowledge and skills to come up with any other activities. Relate the lasers to something you are teaching in any subject. Who better to come up with activities than you – the teacher!!