



SCIENCE LASER SPECTACULAR PART 1 STUDENT WORKSHEET MASTERS AND ANSWER KEYS

Dear Assembly Coordinator and Teachers,

The following pages contain student worksheet masters and answer keys. They are to be used in conjunction with Prismatic Magic's Science Laser Spectacular Part 1 assembly and the Science Laser Spectacular Part 1 Teacher Guides located on Prismatic Magic's Web site.

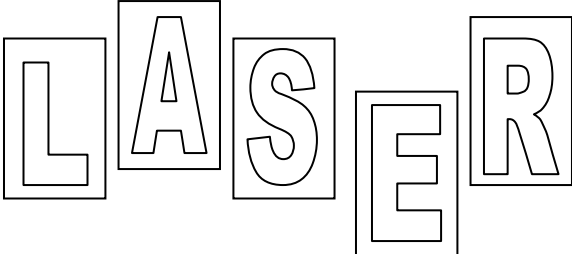
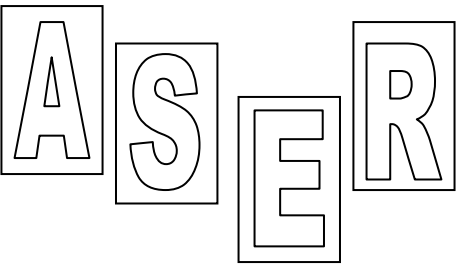


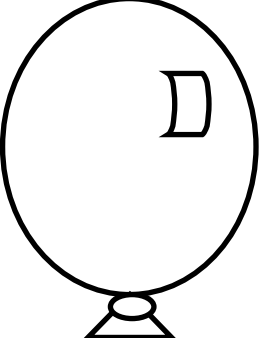
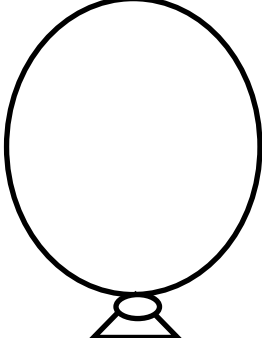
The worksheets are to be given to students **after** Prismatic Magic has presented the assembly at your school. These worksheets are designed to enhance the learning and educational value of the laser assembly.

The worksheets are arranged from simple to advanced with answer keys immediately following each worksheet. Feel free to use any worksheets that you think students will enjoy and be able to complete. We hope you enjoyed the laser program and that you find these worksheets useful.

Sincerely,

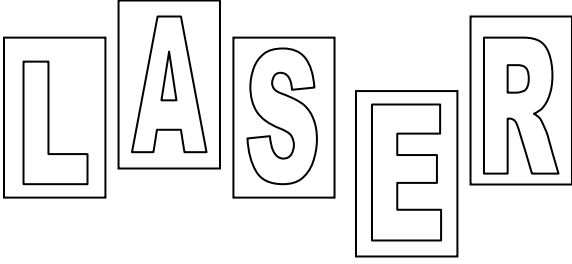
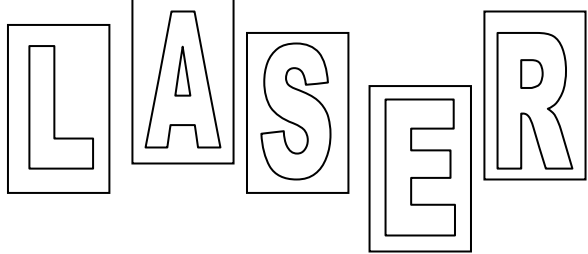


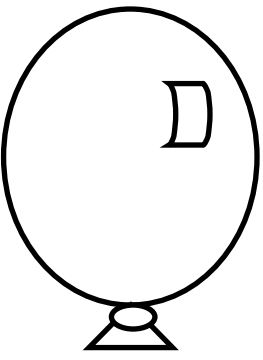
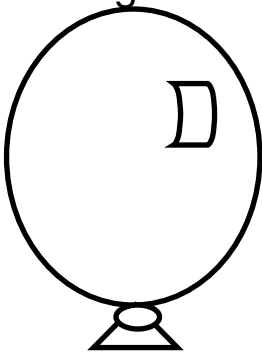
Your Friends at Prismatic Magic

DIRECTIONS: On the left is a picture of something you might have seen during the laser program. Draw in what is missing from the picture on the right. Then color the pictures.

*****TEACHER ANSWER KEY*****

DIRECTIONS: On the left is a picture of something you might have seen during the laser program. Draw in what is missing from the picture on the right. Then color the pictures.

	<p>Missing L</p> 
	<p>Missing laser beam</p> 
	<p>Missing reflective patch</p> 

DIRECTIONS: During the laser program, the primary colors of light were mixed together to make many different colors. Remember, the primary colors of light are red, green and blue. Let's mix colors with crayons or paints, instead of light. Use 3 crayons or paints – red, yellow and blue. These are the primary colors of pigments. Fill in each box with the correct colors. If it says to use more than one color, use one color first, then color or paint over it again with the next color.

red	red and yellow	yellow	yellow and blue	blue	blue and red	red, yellow, and blue
-----	----------------	--------	-----------------	------	--------------	-----------------------

Look at all the different colors you can make with just three crayons or paints! In the box below, draw or paint some laser lines. First make a red line. Now trace over it with yellow. It changed colors. Now try more lines. Remember – only use red, yellow and blue and see how many colors you can make.

*****TEACHER ANSWER KEY*****

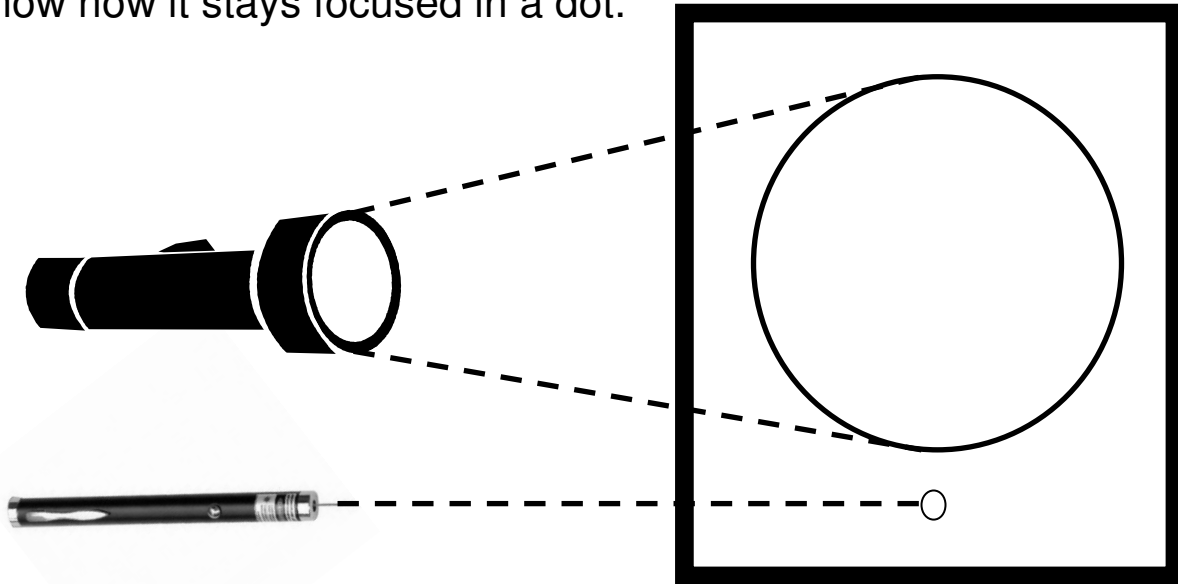
DIRECTIONS: During the laser program, the primary colors of light were mixed together to make many different colors. Remember, the primary colors of light are red, green and blue. Let's mix colors with crayons or paints, instead of light. Use 3 crayons or paints – red, yellow and blue. These are the primary colors of pigments. Fill in each box with the correct colors. If it says to use more than one color, use one color first, then color or paint over it again with the next color.

red	red and yellow	yellow	yellow and blue	blue	blue and red	red, yellow, and blue
-----	----------------	--------	-----------------	------	--------------	-----------------------

Look at all the different colors you can make with just three crayons or paints! In the box below, draw or paint some laser lines. First make a red line. Now trace over it with yellow. It changed colors. Now try more lines. Remember – only use red, yellow and blue and see how many colors you can make.

PICTURES WILL VARY

DIRECTIONS: During the laser program, you might have seen a flashlight shine on the giant screen and then a laser shine on the giant screen. Trace the lines from the flashlight to show how the light spreads out. Then trace the line from the laser pointer to show how it stays focused in a dot.



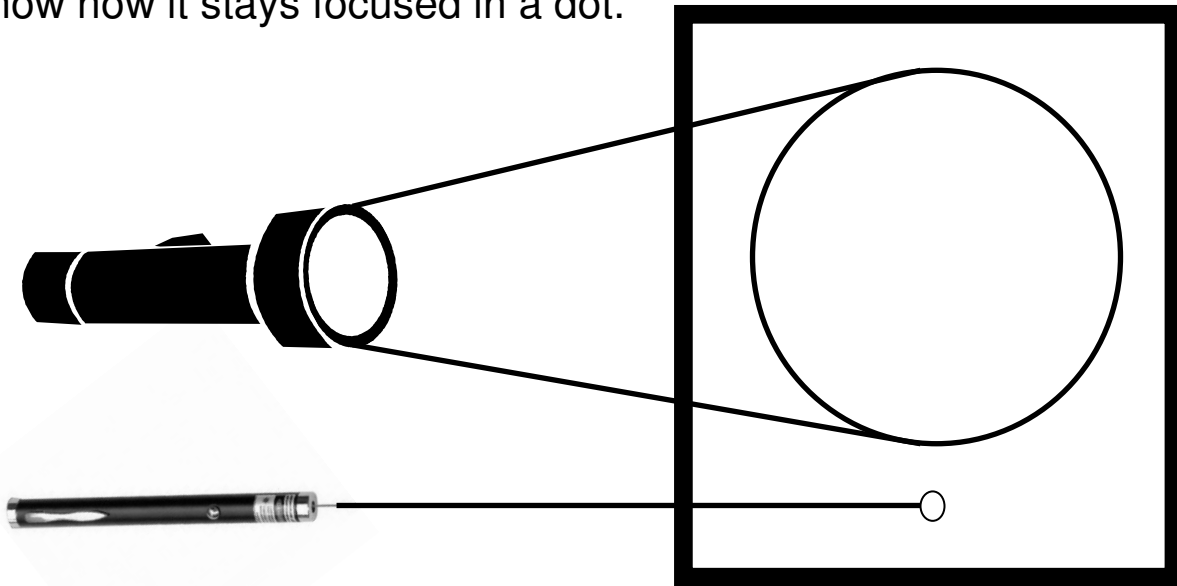
To draw pictures, the laser dot moved around the screen really fast and tricked your eyes into thinking they saw lines and shapes. That's called persistence of vision. Let's see if you can do something like that with this paper. Use a dark color and fill in the small dot down below. Keep the paper flat on your desk and move it back and forth really fast. Did you see a line? Now try to move the paper in a circle really fast. Did you see a circle shape? That's how a laser program is made!



*****TEACHER ANSWER KEY*****

(Please help students with the directions as needed.)

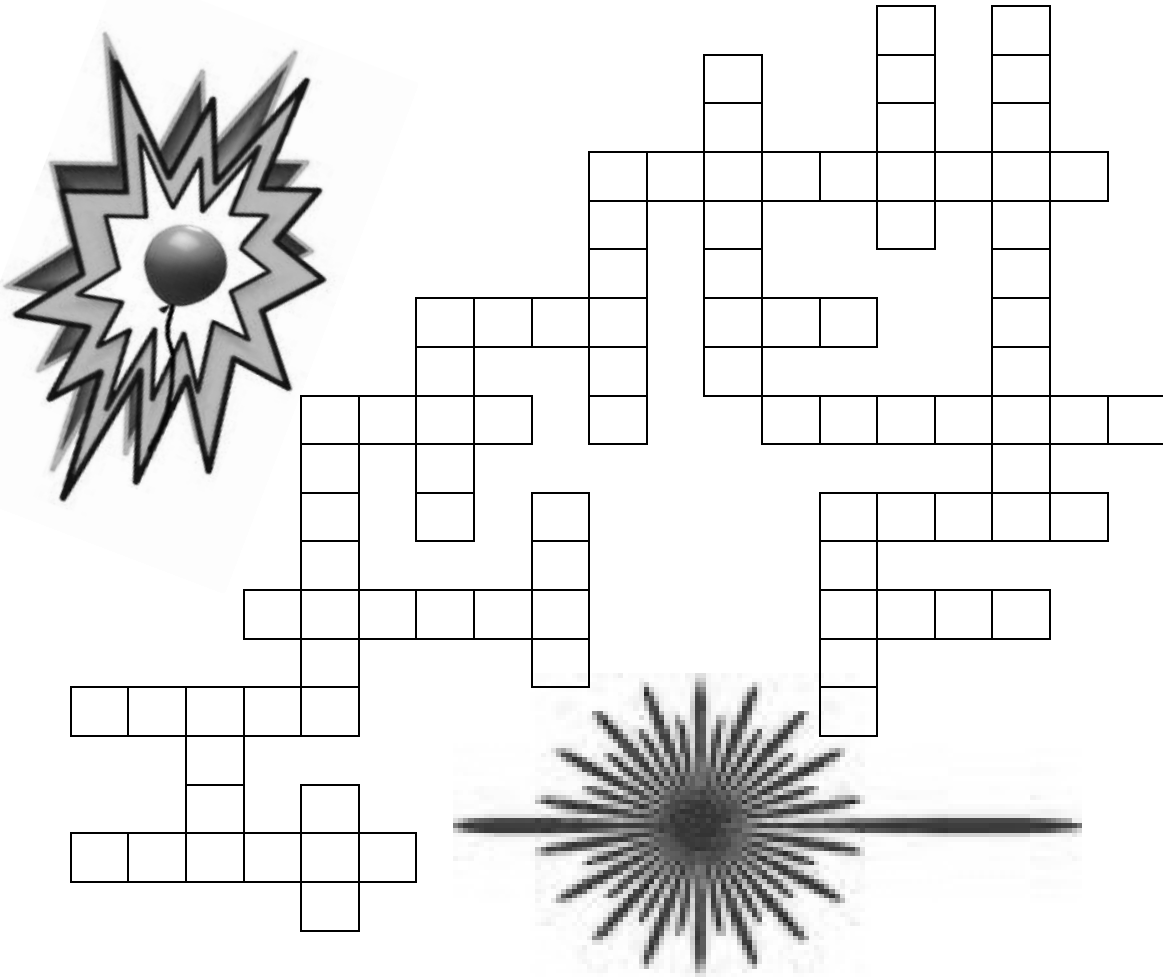
DIRECTIONS: During the laser program, you might have seen a flashlight shine on the giant screen and then a laser shine on the giant screen. Trace the lines from the flashlight to show how the light spreads out. Then trace the line from the laser pointer to show how it stays focused in a dot.



To draw pictures, the laser dot moved around the screen really fast and tricked your eyes into thinking they saw lines and shapes. That's called persistence of vision. Let's see if you can do something like that with this paper. Use a dark color and fill in the small dot down below. Keep the paper flat on your desk and move it back and forth really fast. Did you see a line? Now try to move the paper in a circle really fast. Did you see a circle shape? That's how a laser program is made!



DIRECTIONS: See if you can fit each of the laser-related words below in the correct spaces. There is only one way each word will fit to finish the entire puzzle so be careful.



3-letter words

pop
red

4-letter words

beam
blue
glow
eyes
mist

5-letter words

light
laser
green
white
black

6-letter words

colors
vision
safety

7-letter words

acronym
primary
balloon

9-letter words

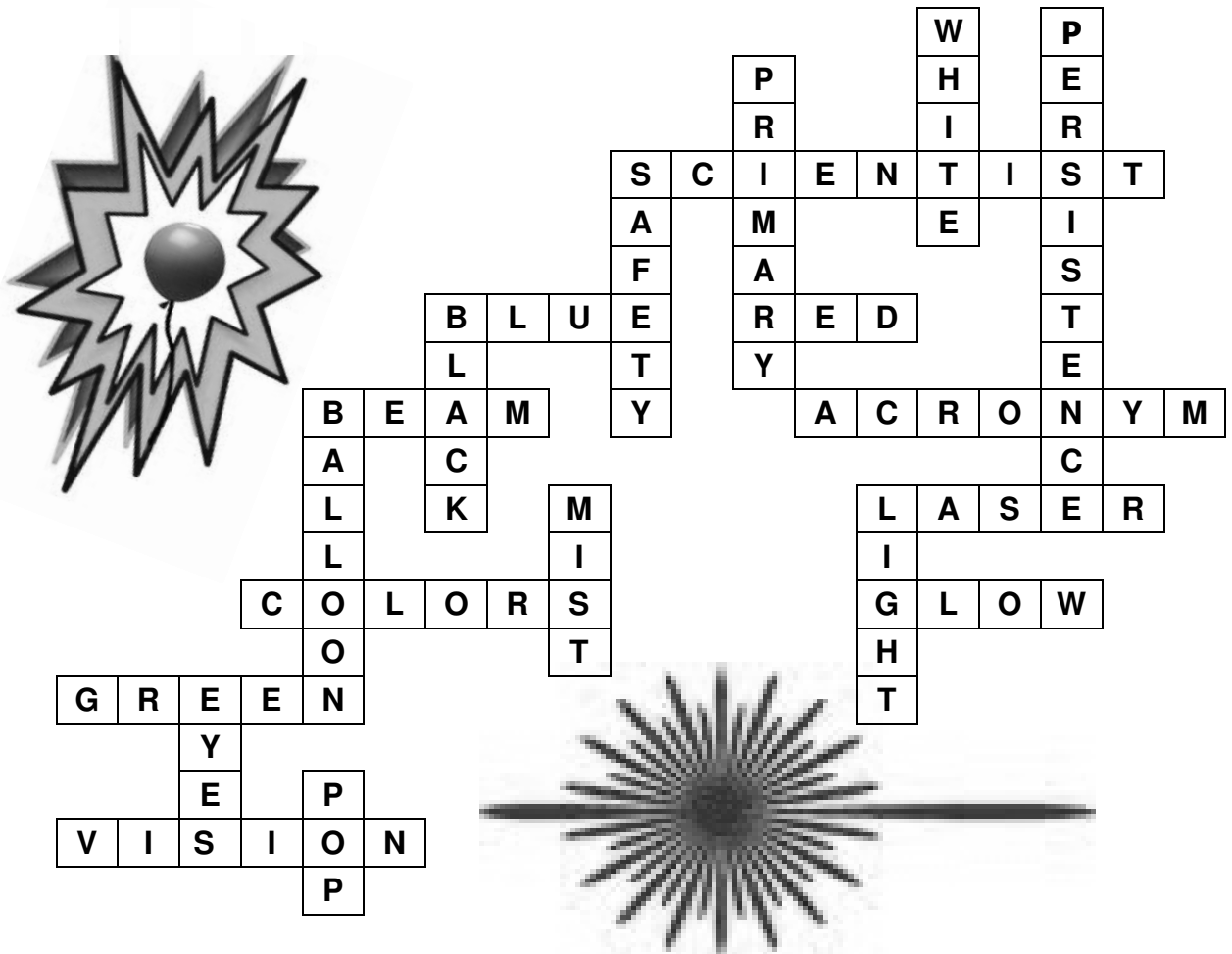
scientist

11-letter words

persistence

*****TEACHER ANSWER KEY*****

DIRECTIONS: See if you can fit each of the laser-related words below in the correct spaces. There is only one way each word will fit to finish the entire puzzle so be careful.



3-letter words

pop
red

4-letter words

beam
blue
glow
eyes
mist

5-letter words

light
laser
green
white
black

6-letter words

colors
vision
safety

7-letter words

acronym
primary
balloon

9-letter words

scientist

11-letter words

persistence

DIRECTIONS: Let's see how much you remember from the science presentation before the laser show. Each question below has a yes or no answer. If the answer is yes, circle the letter in the yes column. If the answer is no, circle the letter in the no column. The first question has been done for you.

Yes	No	Questions
G	F	1. Can a laser beam stay focused for long distances?
L	R	2. Can you see a laser beam if it travels through mist, smoke or fog?
U	O	3. Do laser dots move slowly to make pictures appear on the screen?
V	W	4. Are there five primary colors of light?
P	B	5. Does mixing all the primary colors of light create white?
A	O	6. Should you ever let a laser shine directly in your eyes?
P	N	7. Can lasers be fun if they are used safely?

Now let's check your answers. Look at all the letters you circled. Each letter belongs in the matching numbered spaces below. If you answered all the questions correctly, you will see the answers to two questions. If the answers are not correct, go back and change your answers above. The first letter has been filled in for you.

What did our laser beam do to a white balloon?

MADE IT G !
 1 2 3 4

Guess what? All the letters you didn't circle answer two more questions. Put the letters you did not circle in the matching numbered spaces below to see the answers. The first one has been done for you.

What did our laser do to a black balloon?

MADE IT !
 5 6 7

*****TEACHER ANSWER KEY*****

DIRECTIONS: Let's see how much you remember from the science presentation before the laser show. Each question below has a yes or no answer. If the answer is yes, circle the letter in the yes column. If the answer is no, circle the letter in the no column. The first question has been done for you.

Yes	No	Questions
G	F	1. Can a laser beam stay focused for long distances?
L	R	2. Can you see a laser beam if it travels through mist, smoke or fog?
U	O	3. Do laser dots move slowly to make pictures appear on the screen?
V	W	4. Are there five primary colors of light?
P	B	5. Does mixing all the primary colors of light create white?
A	O	6. Should you ever let a laser shine directly in your eyes?
P	N	7. Can lasers be fun if they are used safely?

Now let's check your answers. Look at all the letters you circled. Each letter belongs in the matching numbered spaces below. If you answered all the questions correctly, you will see the answers to two questions. If the answers are not correct, go back and change your answers above. The first letter has been filled in for you.

What did our laser beam do to a white balloon?

MADE IT G L O W !
 1 2 3 4

Guess what? All the letters you didn't circle answer two more questions. Put the letters you did not circle in the matching numbered spaces below to see the answers. The first one has been done for you.

What did our laser do to a black balloon?

MADE IT P O P !
 5 6 7

DIRECTIONS: At the beginning of the laser assembly, you learned about lasers and the science used to create laser shows. Fill in the blanks below using words from the word box.

The word “laser” is an _____ because each letter stands for an entire word. Remember: Light Amplification by Stimulated Emission of Radiation.

Light spreads out, or diverges, as it travels through the air, but a laser stays _____ for long distances.

A laser _____ can be seen if it travels through mist.

Persistence of vision means the laser moves so quickly that your eyes _____ they see pictures that aren’t really there.

Many colors can be created using the three _____ colors of light.

A white balloon _____ when it was placed in front of a laser beam.

A black balloon _____ because it _____ the light and heat from the bright laser.

WORD BOX

absorbed

acronym

beam

focused

glowed

popped

primary

think

Now find the words you wrote on the blanks plus all the underlined words above in the word search below. The words may be hidden in all directions. Good luck!

V	Y	I	F	X	K	D	P	U	A	V	B	V	C	X	L	T	R	K	O
I	S	Y	P	P	E	K	Z	X	Y	H	G	L	O	W	E	D	A	D	B
S	V	R	W	Q	X	Z	R	S	T	I	M	U	L	A	T	E	D	E	A
I	P	A	C	J	A	O	Q	T	U	X	S	Z	O	T	S	B	I	S	C
O	M	M	Z	I	I	X	F	H	H	Q	P	M	R	H	N	R	A	U	R
N	O	I	T	A	C	I	F	I	L	P	M	A	S	G	Q	O	T	C	O
P	E	R	S	I	S	T	E	N	C	E	E	E	M	I	S	S	I	O	N
P	O	P	P	E	D	Q	W	K	K	O	N	B	C	L	F	B	O	F	Y
U	D	Y	X	D	W	N	H	B	D	V	G	S	B	W	B	A	N	Y	M

*****TEACHER ANSWER KEY*****

DIRECTIONS: At the beginning of the laser assembly, you learned about lasers and the science used to create laser shows. Fill in the blanks below using words from the word box.

The word "laser" is an acronym because each letter stands for an entire word. Remember: Light Amplification by Stimulated Emission of Radiation.

Light spreads out, or diverges, as it travels through the air, but a laser stays focused for long distances.

A laser beam can be seen if it travels through mist.

Persistence of vision means the laser moves so quickly that your eyes think they see pictures that aren't really there.

Many colors can be created using the three primary colors of light.

A white balloon glowed when it was placed in front of a laser beam.

A black balloon popped because it absorbed the light and heat from the bright laser.

WORD BOX

absorbed

acronym

beam

focused

glowed

popped

primary

think

Now find the words you wrote on the blanks plus all the underlined words above in the word search below. The words may be hidden in all directions. Good luck!

V	Y	I	F	X	K	D	P	U	A	V	B	V	C	X	L	T	R	K	O
I	S	Y	P	P	E	K	Z	X	Y	H	G	L	O	W	E	D	A	D	B
S	V	R	W	Q	X	Z	R	S	T	I	M	U	L	A	T	E	D	E	A
I	P	A	C	J	A	O	Q	T	U	X	S	Z	O	T	S	B	I	S	C
O	M	M	Z	I	I	X	F	H	H	Q	P	M	R	H	N	R	A	U	R
N	O	I	T	A	C	I	F	I	L	P	M	A	S	G	Q	O	T	C	O
P	E	R	S	I	S	T	E	N	C	E	E	E	M	I	S	S	I	O	N
P	O	P	P	E	D	Q	W	K	K	O	N	B	C	L	F	B	O	F	Y
U	D	Y	X	D	W	N	H	B	D	V	G	S	B	W	B	A	N	Y	M

DIRECTIONS: First, fold the page on the dotted line below. Then fill in each blank space in the grid with the appropriate word. Unfold the page and read the story, filling in the words from the boxes as you go.

1. noun	7. noun	13. adjective
2. adjective	8. verb	14. verb ending in -ing
3. noun	9. plural noun	15. noun
4. room in the school	10. verb ending in -ed	16. name of person at school
5. adverb	11. noun	17. verb
6. adjective	12. verb ending in -ed	18. adjective

A(n) 1 from Prismatic Magic drove to our school in a(n) 2 3 to put on a laser assembly. All of the laser equipment was set up in the 4. When we came in, we all sat down 5 and faced a(n) 6 screen. We learned that a laser is a focused beam of 7. We saw a laser beam 8 through a cloud of mist. We learned about persistence of vision. That means that if a laser dot moves really quickly around the screen, our eyes are tricked into seeing drawings and 9 that aren't really there. Red, green and blue are the primary colors of light. Prismatic Magic brought one laser of each color to the school. The laser scientist showed us that when all three primary colors of light are 10, they turn white. The laser scientist also made a white 11 glow with the lasers. We tried the same thing with a black balloon and it didn't glow – it 12. It is important to be very 13 around lasers, but if they are used safely, they can be a lot of fun. After 14 about lasers, we watched an amazing laser show. The show was filled with lasers and 15. I saw 16 17 during the show. That Prismatic Magic laser assembly was educational and 18 !!!

(Can you think of words that would make the story correct? Try it.)

*****TEACHER ANSWER KEY*****

DIRECTIONS: First, fold the page on the dotted line below. Then fill in each blank space in the grid with the appropriate word. Unfold the page and read the story, filling in the words from the boxes as you go.

1. noun Answers will vary	7. noun	13. adjective
2. adjective	8. verb	14. verb ending in -ing
3. noun	9. plural noun	15. noun
4. room in the school	10. verb ending in -ed	16. name of person at school
5. adverb	11. noun	17. verb
6. adjective	12. verb ending in -ed	18. adjective

A(n) 1 from Prismatic Magic drove to our school in a(n) 2 3 to put on a laser assembly. All of the laser equipment was set up in the 4 . When we came in, we all sat down 5 and faced a(n) 6 screen. We learned that a laser is a focused beam of 7 . We saw a laser beam 8 through a cloud of mist. We learned about persistence of vision. That means that if a laser dot moves really quickly around the screen, our eyes are tricked into seeing drawings and 9 that aren't really there. Red, green and blue are the primary colors of light. Prismatic Magic brought one laser of each color to the school. The laser scientist showed us that when all three primary colors of light are 10 , they turn white. The laser scientist also made a white 11 glow with the lasers. We tried the same thing with a black balloon and it didn't glow – it 12 . It is important to be very 13 around lasers, but if they are used safely, they can be a lot of fun. After 14 about lasers, we watched an amazing laser show. The show was filled with lasers and 15 . I saw 16 17 during the show. That Prismatic Magic laser assembly was educational and 18 !!!

(Can you think of words that would make the story correct? Try it.)



DIRECTIONS: The word "laser" is hidden in the puzzle below many times. How many can you find?

A L A R S L E L R A S L A
A A A A E E R E R L A R L
S A E A S E S E R E E A L
E E R S L E S S R E S A L
S L E R L A L E R E S A L
A E E R L A S E R E S A L
R E S L L A S E R E S A L
R S A L L A S E R E S A L
L R L A L A S E R E S A L
A E L A L A S E R E E A L
R L L R L S S R R R S S L
A S L R S A R E L E A A A
A S A R L S A A R S R R L

TEACHER ANSWER KEY

DIRECTIONS: The word "laser" is hidden in the puzzle below many times. How many can you find? *** LASER IS HIDDEN 35 TIMES IN THE PUZZLE ***

