

SMA Student Stair Safety Kit

Dear Family,

We are starting our study on stair safety. Did you know that research shows that a large amount of falls that result in serious injury are not caused by faulty stairs, but due to unsafe use of stairs? This is a program designed for students and families to learn the basics of stair safety and keep our homes safe. Students will learn stair vocabulary and the rules of stair safety. For more information about stairs or stair safety, please visit the Stairway Manufacturers' Association website at: <http://www.stairways.org/>.



Here are some suggested activities to complete together:

- **Help your child complete the Stair Safety Checklist.**
- Learn the Stair Safety Song
- Take a walk and look at the different types of stairs in your neighborhood.
- Find pictures of stairs in magazines, newspapers, or books.
- Create a plan for your family to follow stair safety rules.

Literature about Stairs:

On the Stairs by Julia Hofstrand Larios - Read this book and then discuss how the characters can be safe on the stairs.



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Welcome to the exciting process of testing your stairs to see how safe they are! First, remember if your stairs “fail” any of these tests it does not mean that you can’t use your stairs. There are easy ways to make your stairs safer! Using this Stair Safety Kit will teach you how to be safer in your home, and you can teach the rest of your family. Bring the information back to school and share it with the rest of your class.

Before you start:

- Study the stair vocabulary words in **bold**. They are in your glossary.
- Tell your a grownup in your family you need their help to test your stair.
Do not try to test your stair by yourself.

Activity 1: Cut out the circles in your stair safety kit. You can glue or tape them to cardboard to make them easier to use. Circle A should not fit thru any opening in a **guard** at the edge of a floor to meet the **building code**. Circle B should not fit through any opening in a **guard** on a **stair**. Be sure you hold the circle as shown in the picture when testing your **guards**.

If you have a **guard** at the edge of a floor you can measure the height from the floor to the top of the **guard**. It should be at least 36 inches above the floor to meet the **building code**. You can also check to be sure there is no furniture near the **guard** that small children might climb and then fall over the **guard**. You should never climb or play near a **guard** to prevent falls over the **guard** or through it.

*What do I do if **guards** do not meet the code? If your circle can pass thru any openings when held correctly it means that, small children can either fall through or get stuck in the openings, so be very careful with small children, especially ones who are crawling on the floor! You should never climb or lean or try to sit on a **guard**. If your **guards** are too low everyone even adults should be extra careful.*

Activity 2: Cut out the measuring tool in your kit. Stairbuilders call this a **square**. You can glue or tape it to cardboard to make it easier to use when testing. Be sure to hold it in place as shown in the picture. With help from an adult hold your **square** on the **tread** and measure the **riser** height and **tread** depth just like in the picture. With help from an adult, check the first three **riser** heights and **tread** depths. Mark the largest and smallest on the square with a pencil. If they are very close to the same size that means they are uniform and easier to walk on because they all feel the same. To meet the **building code** the distance between the smallest to the largest measurements you made should not be farther apart than three of the small marks on your square. Three mark is a fraction of an inch called three eighths or $\frac{3}{8}$ inch. Do this for both the **riser** height and the **tread** depth. You can also measure the distance between the marks you made on your **square** at your desk with a ruler.

Look at where the marks are on your square. The largest **riser** should not be more than $7\frac{3}{4}$ inches and the smallest **tread** should not be less than 10 inches to meet the **building code**.



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*What do I do if my stairs don't meet the **building code**? The **building code** is always changing as experts learn more about building safety. If your **steps** are too tall or too narrow, or if they are not uniform, your house may have been built when the code was different. You will need to be extra careful when you are walking up and down so you don't fall. Always make sure everyone, especially other children and elderly people, hold the **handrail** when using the **stairs**.*

Activity 3: Sometimes **handrails** are on the top of a **guard** or they may be attached to a wall. If your **handrail** is attached to the wall ask an adult to help you use a ruler or your square to measure the distance between the wall and the side of the **handrail** next to the wall. This distance should be at least 1½ inches to allow enough finger room to grasp the handrail. Test to make sure you have room for your fingers the full length of the **handrail**. Now measure from the wall to the side of the **handrail** farthest away from the wall, this distance should be no more than 4 ½ inches to allow enough space for people to use the **stairway**.

Whether or not your **handrail** is attached to the wall you should also check to be sure your **handrail** starts at the beginning of the **stair** at both the top and bottom of each **flight** of **stairs** in your **stairway**. If your **handrail** passes all these tests it will meet today's **building code**.

*What do I do if my **handrail** does not meet the **building code**? If your **handrail** is too close to the wall, you can purchase wall mount brackets from most hardware stores and reposition your handrail in a safer position on the wall. If this is not possible, be very careful when using the **stairs**, and always use the **handrail**. If your hand is already on the **handrail**, you won't have to reach out and grab for it if you are falling!*

Activity 4: With an adult holding a yardstick or a tape measure you can test to see if the **handrail** is at a height between 34 inches and 38 inches as required by the **building code**. Put one end of the measuring tape at the tip of the **nosing** of the **tread**. You must be sure to hold the tape measure or yardstick vertical, straight up and read the measurement at the top of the **handrail**. (When something is exactly vertical stairbuilders say it is "plumb").

*What should I do if my **handrail** is too high or too low? If your **handrail** is attached to a wall it could be unfastened and attached at the correct height. If it is at the top of a **guard** you may be able to add another **handrail** on the opposite side of the **stair**. Most **stairs** have only one **handrail**. For this reason the **building code** uses a height that works for grownups and most children. If you are not a grownup and your **handrail** is low it might be just right for you. You can discuss what is best with the grownups in your home. Just remember to always use the **handrail** and be sure that an adult knows if you cannot reach it.*

Activity 5: Now you can answer the questions on your Stair Safety Survey. Share your answers with everyone in your home and take it back to school to discuss in class.



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Glossary of Stair Vocabulary: (listed in alphabetical order)

Baluster – A vertical member used to limit the size of openings within a *balustrade* and provide support to the top of a *balustrade* or *guard* system

Balustrade – A system of *rails, posts, balusters, or other ornamental components* used to separate two areas

Building Code – Rules used to make sure that buildings are safe to use and live in.

Flight – An uninterrupted series of *stairs or steps* from one *landing* to the next

Guard – A system of *rails, posts, balusters, or other ornamental components* used to minimize falls from elevated walking surfaces and the sides of stairs

Handrail – A sloped or horizontal *rail* intended for grasping by the hand as an assist for; guidance, support, pulling, or arresting a fall

Landing – The space at the top and bottom of a *flight* at a floor level or between flights to provide clear approach, a place to turn, or provide a resting place.

Nosing – The leading edge of the *tread*

Post or Newel – A vertical support member of a guard or balustrade system that connects the balustrade/guard to the stair or floor

Rail – A sloped or horizontal member of a balustrade

Riser – The vertical component of a *step* filling the space between the *treads*

Square – A tool with a square corner used by stairbuilders and carpenters.

Stair – 1. A *step* or change in elevation of one *riser* height, 2. A unit segment of a *flight*, consisting of a *riser* and a *tread*

Stairway – One or more *flights of stairs*, with the necessary *landings* and *platforms* connecting them, to form a continuous and uninterrupted passage from one level to another

Step – 1. A change in elevation of one riser height to a floor or landing without a tread, 2. A unit segment of a *flight* consisting of a *riser* and a *tread*

Tread – The horizontal part of a *stair* upon which the foot is placed

Winder - A *tread* with nonparallel edges

*Highlighted terms are emphasized in the stair safety kit instructions.

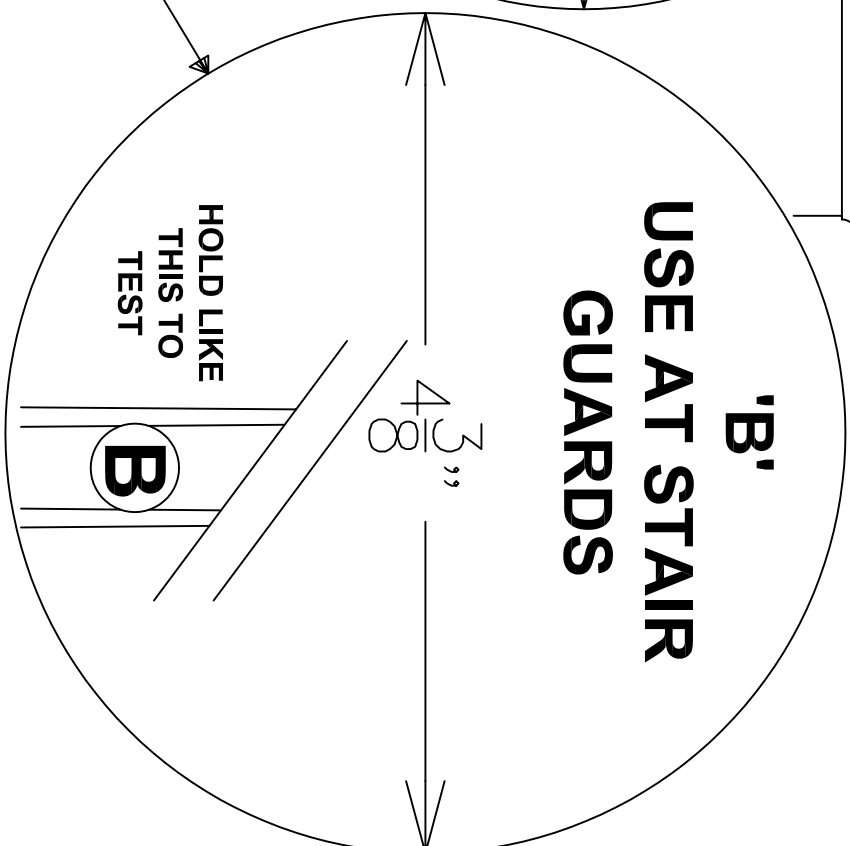
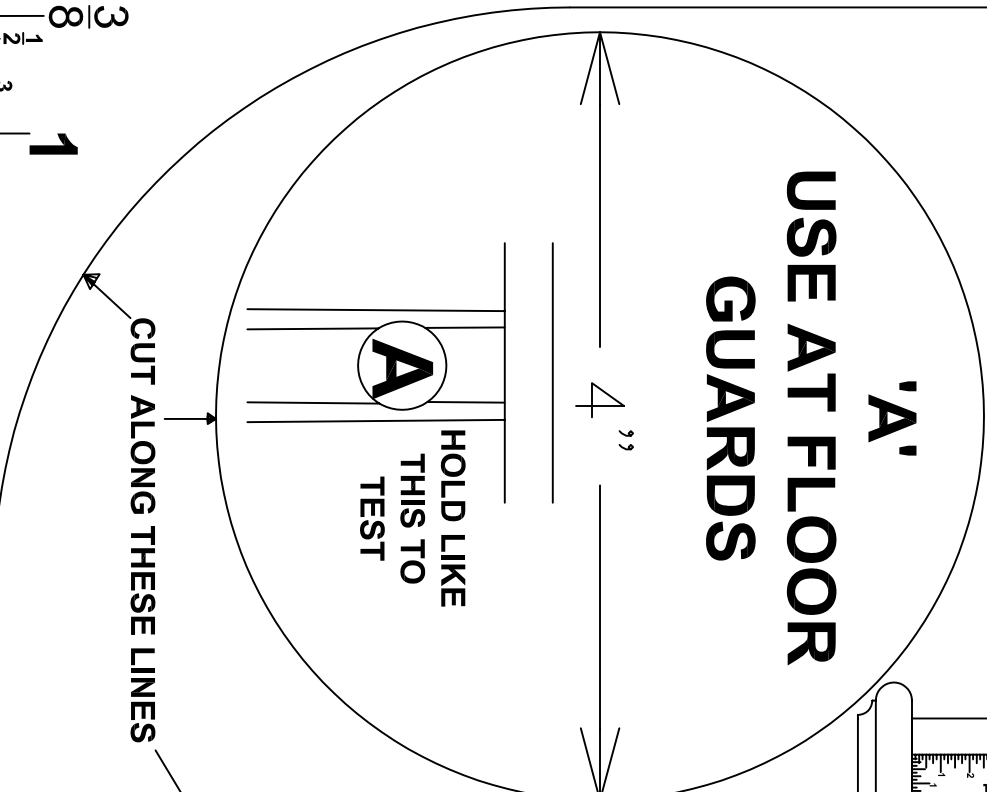
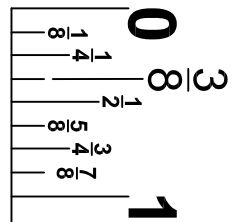


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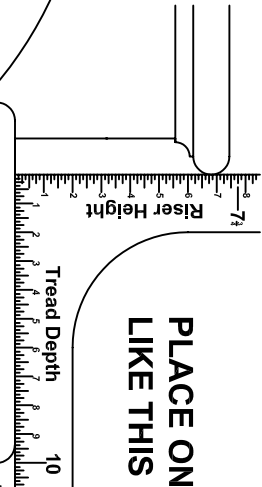
Riser Height

Tread Depth

10



PLACE ON STAIR LIKE THIS



CUT OFF BORDER AT LINE ON BOTH EDGES BEFORE USING TO MEASURE

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Using the SMA Stair Safety Kit, follow the directions for each activity and record the results of your Stair Survey below.

Activity 1: Guard Openings

Floor Guard Openings Meets Code _____ Does Not Meet Code _____

Stair Guard Openings Meets Code _____ Does Not Meet Code _____

Floor Guard Height Meets Code _____ Does Not Meet Code _____

Activity 2: Step Geometry

Riser Height Meets Code _____ Does Not Meet Code _____

Tread Depth Meets Code _____ Does Not Meet Code _____

Stair Uniformity Meets Code _____ Does Not Meet Code _____

Activity 3: Handrail Requirements

Stair has Handrail Meets Code _____ Does Not Meet Code _____

Handrail from top to bottom Meets Code _____ Does Not Meet Code _____

Handrail Finger Room Meets Code _____ Does Not Meet Code _____

Handrail Projection Meets Code _____ Does Not Meet Code _____

Activity 4: Handrail Height

Handrail Height Meets Code _____ Does Not Meet Code _____

Other Stair Safety Questions

Is there a light switch at the top and bottom of your stairs? Yes _____ No _____

Are your stairs in good repair? (No loose boards, nails sticking out or broken edges to cause a fall) Yes _____ No _____

If you have carpeting on your stairs, is it fastened securely with no lose edges? Yes _____ No _____

Are your stairs clear to walk and free of all clutter? Yes _____ No _____

Do you have throw rugs at the top or bottom of the stairs? Yes _____ No _____

