



Design Challenge: Family Obstacle Course

This challenge requires adult supervision!

THE STORY:

Viv, Luna, Ron, Grace, Niko and Kai are the Dragonfly Kids. These friends work together to help solve problems in their homes, school and the town of Sun Valley. When it gets warm outside and they are not in school for a few weeks, the kids are looking for fun activities to do with their families. They came up with the idea to create an obstacle course in their home or yard to get exercise and have fun.



YOUR TASK:

You will design an obstacle course with an adult for your family. You'll have to decide where to build the course and what obstacles to include. You will make a plan to build the obstacles. Finally, you will create rules for running the obstacle course.

You will:

1. Decide where to build your obstacle course. Look for possible places where you can set up an obstacle course. You will need a big area. Do you have a yard? Is the basement big enough? Is there a room in your house that might be big enough to place the obstacles?
2. Look around your house and find things that you could use to build the obstacles. Brainstorm ideas and make a list of obstacles to include in your course.
3. Plan and build the obstacles using the things that you have found around the house.
4. Make a map of the obstacle course to show your family.
5. Run the obstacle course to make sure that you have room between the obstacles and to be sure that there are no problems with the obstacles.
6. Write the rules for the obstacle course.

YOUR AUDIENCE

You will invite your family to run the obstacle course. You'll show your family the map of the obstacle course and explain the rules to them.

INFORMATION YOU'LL NEED TO GET STARTED

Obstacle courses are a series of tasks laid out in an order that runners must follow. The obstacles can test a person's skill at jumping, running, balancing, bending, walking backwards, crawling, problem solving, or other tasks that you think would be fun. You can make the obstacles easy or hard, or your course can be a combination of hard and easy obstacles.

Obstacles are placed in a course with enough space for people to run between them safely. Once it is set up, *you* and an adult should run the obstacle course to be sure there is enough space between the obstacles. If an obstacle needs to be fixed, take the time to fix it. If an obstacle is too hard for you, it is probably not a good obstacle for the family.

**MAKE SURE AN ADULT CHECKS AND TESTS THE OBSTACLES BEFORE YOU TRY THEM!
SAFETY FIRST!**

You can create the obstacle course using anything that you have around the house. Look for boxes, string, tires, flower pots, pillow, cushions, parking cones, paper cups, brooms, sticks, pool noodles, baby pools, wooden boards, bricks, plastic milk jugs, soda bottles, or towels. You can use anything that works!

COLLECT THINGS TO MAKE THE OBSTACLES

Now it's time to look around the house and collect things that would make good obstacles. If you are building the course inside, you can collect inside items like pillows, stools, blankets, buckets, etc. If you plan to set up the course outside, you will have to find things that will not get dirty or ruined outside like parking cones, boards, brooms, pool noodles, skateboards, etc. Make a list or draw the things here.

PLANNING THE COURSE

Now that you have collected things to make obstacles, it's time to plan the course.



STEP 1: Find a space to set up the course

Choose a space in your yard or your house to build the obstacle course. Ask an adult to help find a good spot that will be big enough for the obstacles.

Measure the space that you have chosen for the course. You will need a yardstick, tape measure, or a mechanical tape measure. Draw the space on the **Obstacle Course Map** and record the measurements.

STEP 2: Brainstorm obstacles

Look at the things that you have collected. Brainstorm ways to combine the items (put them together) to make the obstacles.

Use the **Obstacle Brainstorming Cards** to help you come up with new ideas to create obstacles. Write each item on a card. Cut the cards out. Put one or two cards together and brainstorm how to make an obstacle from the items.

Write or draw your ideas for obstacles and number them.



STEP 3: Collect the tools that you will need to build

Ask an adult to help you collect the tools you might need to build the obstacles. Think about ways that you can put your obstacles together.

You could use string, rope, tape, staples, glue, etc. Don't forget that you can make an obstacle by pushing things into the ground, or letting gravity do the work. Placing one object on top of another might be enough. You might lay a wooden board on top of one brick on each side to make an obstacle that works like a balance beam.



STEP 4: Try out and build the obstacles

Try out your ideas for obstacles with an adult. You may have to change your idea a bit if it doesn't work. Engineers make changes to their designs when something doesn't work the way they thought it would. You can too!

Keep working on each obstacle until it works the way you would like it to. With an adult, build each obstacle so it is sturdy and safe for the runners.



STEP 5: Draw a map of the obstacle course

It's time to draw, label and number the obstacles on the map.

Draw the obstacles on the **Obstacle Course Map**. Measure between the obstacles to show how far apart from one another you will place them. Be sure to test the spacing first!

Number each obstacle on the map. Draw arrows between the obstacles to show the path that the course follows.

Give each obstacle a fun and creative name!



STEP 6: Write rules for the start, obstacles, and finish

Start: Do runners begin with a whistle, on "GO!", or ?

Some examples of obstacle rules you might write:

Obstacle #1: The Plank Walk the plank from one end to the other end without falling. If you fall, you must go back to the beginning of the course (or redo the obstacle).

Obstacle #2: The Fish Tank You must catch 3 fish from the kiddie pool and place them into the bucket without dropping them. If you drop a fish, you must...

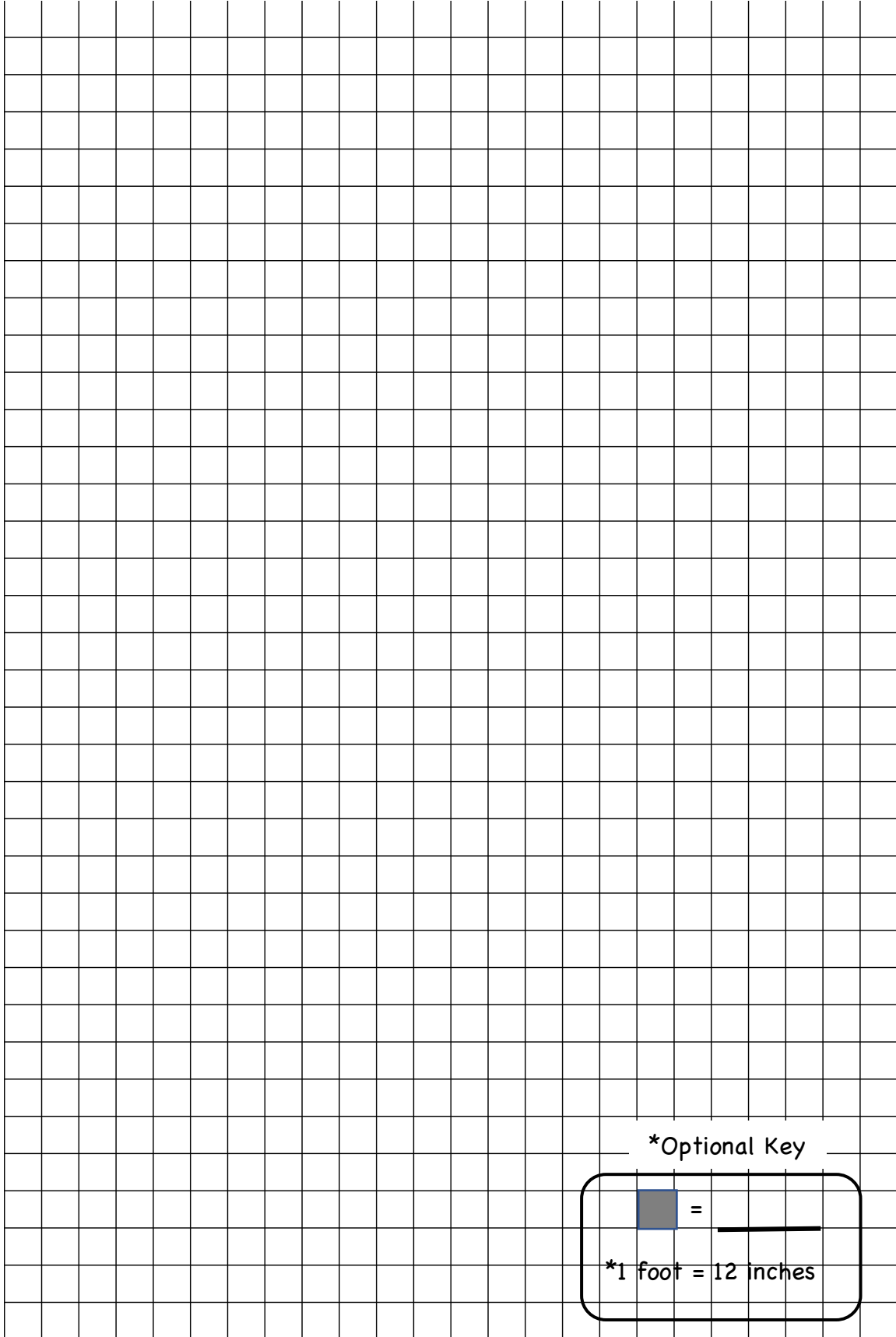
Finish: Will you have a finish line? Will you time runners?

INVITE YOUR FAMILY TO HAVE FUN!

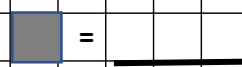
Show your family the map and explain the rules. You might want to demonstrate running the course for them.



OBSTACLE COURSE MAP



*Optional Key



*1 foot = 12 inches

OBSTACLE BRAINSTORMING CARDS

Write each item that you have collected on a card. Cut the cards and then put two or three cards together to come up with obstacles. Draw your ideas on the next page.















OBSTACLE DRAWINGS

Draw and number the obstacles you'll make.

THINKING ABOUT MY WORK

Color the face that shows how you feel about the work you did on the Family Obstacle Challenge.

I tried my hardest on this challenge.			
The obstacles I designed were creative.			
The obstacle course was safe and fun.			
I was neat and careful when drawing the obstacles, map and the rules.			

What I enjoyed most about this challenge:

Ideas for fun things I can design next!

