

## THE CHALLENGE:



Did you know you could grow a garden without soil? This is called hydroponics. Growing plants hydroponically helps gardeners and farmers grow more food faster, in any season, and in smaller places, like your home.

Your challenge is to grow something in a mason jar or plastic bottle without soil.

A few ideas can be found below but be creative and crafty if you don't have the exact materials!

[2L Bottle Garden](#)  
[Kratky Lettuce](#)  
[Hydroponics](#)

~Create, Test, Improve.

~STEAM TEAM

## Learning Activities

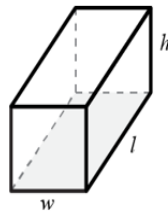
### Language Arts:

\*\*Journaling is a great way to help keep your observations and data in one place. It also helps you when asking questions and coming up with solutions and conclusions. Check out this resource for some help with journaling. [How to Keep a Science Journal](#)

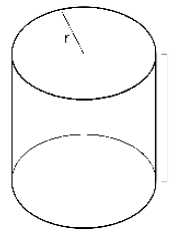
In your journal, create a day-by-day diary from the perspective of your plant during its life in your home. Don't forget to mention its five senses. What it hears, feels, smells, tastes and sees will keep it interesting and could add comic relief. Will your plant hear about this pandemic? Check out NASA's [Diary of a Zucchini](#) and aeronics from 2012.

### Numeracy:

Find the volume of water your container holds for your hydroponics activity. Record in your journal.



$$V = (l) \times (w) \times (h)$$



$$V = \pi r^2 h$$

\*  $\pi = 3.14$

### Science/Social Studies:

Community gardens are popping up everywhere. What positive impacts could this have on different communities? Your community? The healthcare system?

Check out the link below to help answer those questions in your journal and generate new ideas.

[How an Urban Farm in Philadelphia is Transforming Lives.](#)

#SDGs #zerohunger @connectSDGs

### The Arts:

Use different kinds of seeds, beans, rice, or pasta to create a mandala.



What is the purpose of chlorophyll in plants?

