



Science Virtual Learning

2nd Grade Inquiry Board

April 10, 2020



2ND GRADE SCIENCE
Lesson: April 10, 2020

LEARNING TARGET:

Students will develop and conduct a plan to present possible growing conditions to alter, such as soil type or temperature.



BACKGROUND: This is a new skill for 2nd graders.

- ❖ 1st: Students learn the parts of a plant and how the parts help the plant survive.
- ❖ 2nd: Students plan and conduct investigations on the growth of plants when growing conditions are altered.

ENGAGE:

Do you remember what plants need to survive? [Read this!](#)

ENGAGE

Today, we are going to be scientist that study plants. They are called **botanists**!



What does a botanist do?

How can a botanist help plants?

ENGAGE

Look at these two pots. I planted them at the same time!

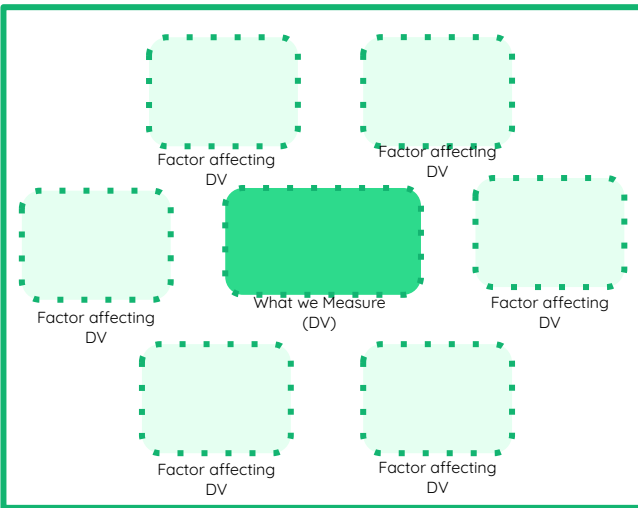
What do you notice? What do you wonder?



These plants had the same amount of sunlight and water!

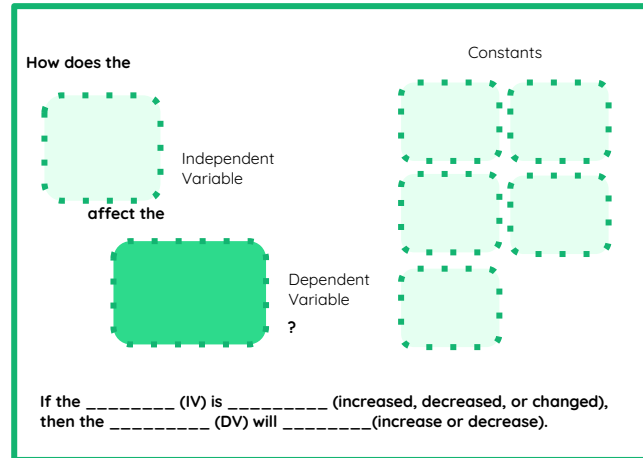
ENGAGE

Today we are going to be **botanists** and plan our own experiments to **study plants!** We will use an **inquiry** board to develop our testable question.



FRONT

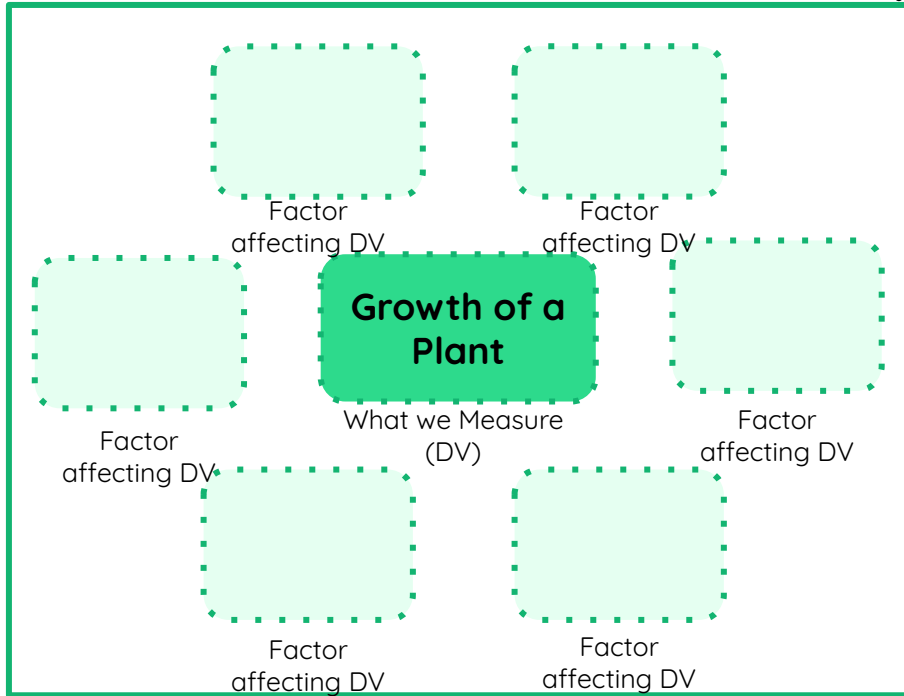
BACK



Inquiry means to ask questions and investigate!

EXPLORE

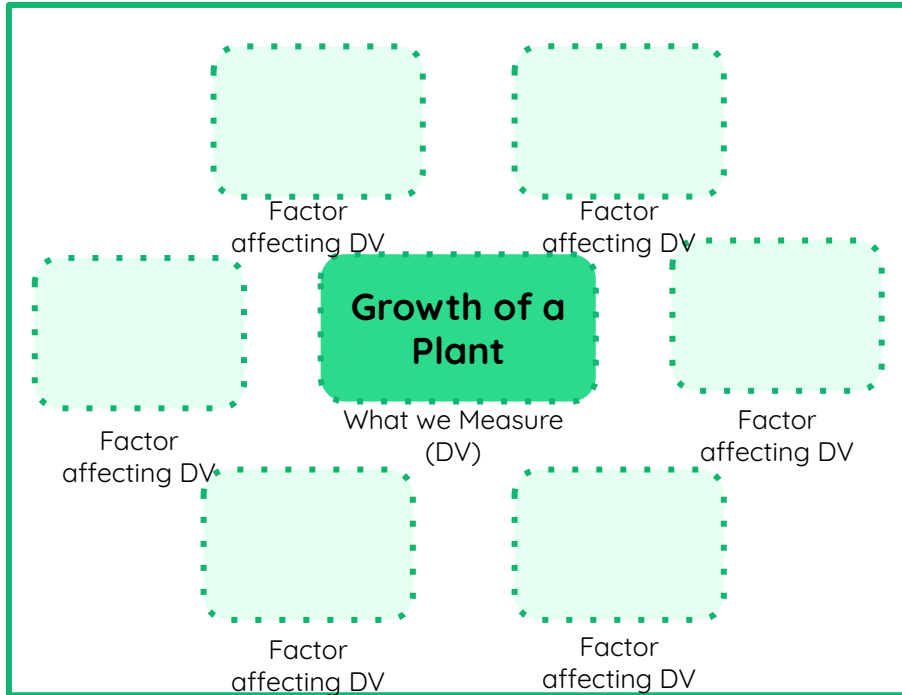
You all just thought of many questions about my plants. Today we are going to design experiments that **measure how much a plant will grow!**



Follow along on your [handout](#) and write with us!

EXPLORE

Dependent Variable (DV)-what we measure



Watch this video to see a vocabulary chant for **dependent variable!**



EXPLORE

We know plants need sunlight and water to grow.

What could make a plant grow **even more**?

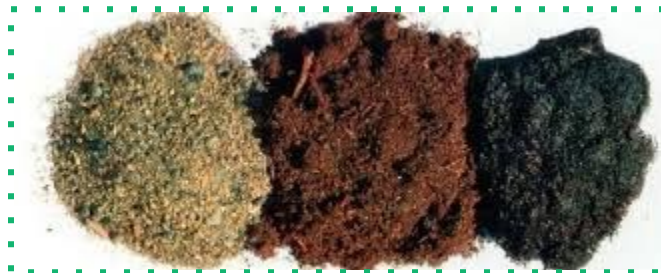
What could you **change** to make a plant grow more?



Does the size of the pot matter?



Does what I water the plant with matter?



Does the type of soil matter?

EXPLORE

All of the things we could change, like the size of the pot, what we water the plant with, the type of soil, **are called independent variables.**

Watch this video to see a vocabulary chant for **independent variable!**



EXPLORE

All of the things you thought about changing like the size of the pot, type of water, type of soil, and more are the **independent variables!**

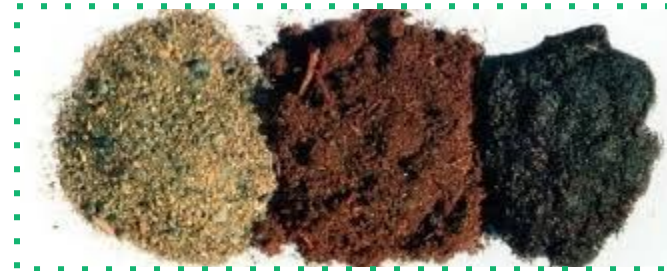
We need to write down all of those ideas on our inquiry board!



Does the size of the pot matter?



Does what I water the plant with matter?



Does the type of soil matter?

EXPLORE

Amount
of water

Factor affecting DV

Type of
water

Factor affecting DV

Size of
the pot

Factor affecting DV

Growth of a
Plant

What we Measure (DV)

Temperature

Factor affecting DV

Type of
soil

Factor affecting DV

Amount
of light

Factor affecting DV

Write down
all of the
things you
can think of
to change to
see if a plant
would grow
more!

Yours can be
the same or
different than
mine

EXPLORE

Now we need to **pick ONE factor** affecting the growth of a plant to **test!**

I am going to pick the **temperature** as my **independent variable**.

Amount of water

Factor affecting DV

Type of water

Factor affecting DV

Size of the pot

Factor affecting DV

Growth of a Plant

What we Measure (DV)

Temperature

Factor affecting DV

Type of soil

Factor affecting DV

Amount of light

Factor affecting DV

EXPLORE

How does the



Independent Variable

affect the

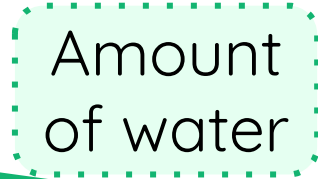


Growth of a Plant

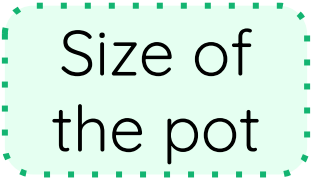
Dependent Variable

?

Constants



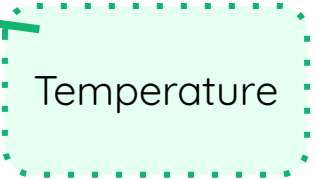
Amount of water



Size of the pot



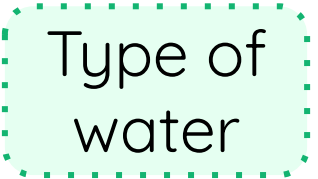
Amount of light



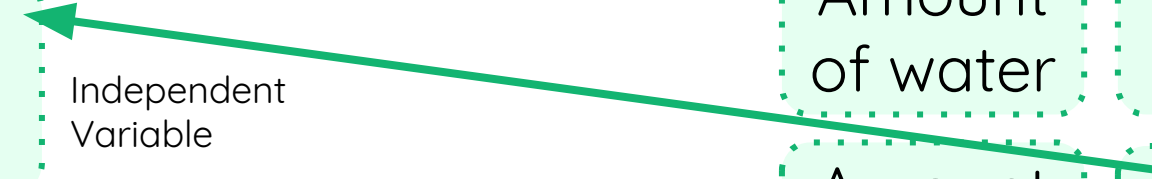
Temperature



Type of soil



Type of water



If the _____ (IV) is _____ (increased, decreased, or changed), then the _____ (DV) will _____ (increase or decrease).

EXPLORE

How does the

Temperature

Independent Variable

affect the

Growth of a Plant

Dependent Variable

?

Constants

Amount of water

Size of the pot

Amount of light

Type of soil

Type of water

If the _____ (IV) is _____ (increased, decreased, or changed), then the _____ (DV) will _____ (increase or decrease).

EXPLORE

How does the

Temperature

Independent Variable

affect the

Growth of a Plant

Dependent Variable
?

Constants

Amount of water

Size of the pot

Amount of light

Type of soil

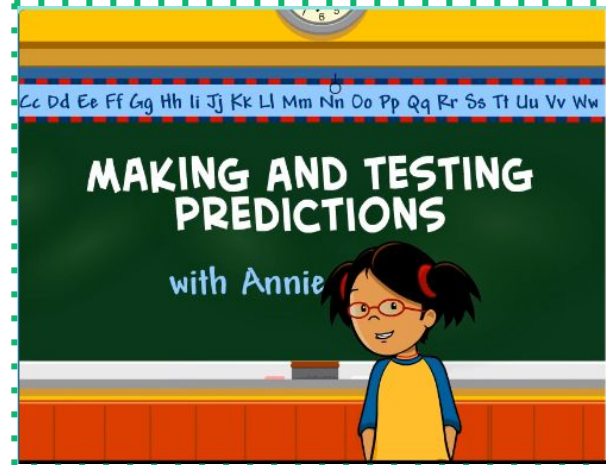
Type of water

Our testable question is:

How does the temperature affect the growth of a plant?

If the _____ (IV) is _____ (increased, decreased, or changed), then the _____ (DV) will _____ (increase or decrease).

We need to make our **hypothesis**! Watch this [Brainpop Jr. video](#) to learn what a hypothesis is!



EXPLORE- WRITING OUR HYPOTHESIS

How does the

Temperature

Independent Variable

affect the

Growth of a Plant

Dependent Variable

?

Constants

Amount of water

Size of the pot

Amount of light

Type of soil

Type of water

If the **temperature** (IV) is _____ (increased, decreased, or changed), then the **growth of a plant** (DV) will _____ (increase or decrease).

EXPLORE

How does the

Temperature

Independent Variable

affect the

Growth of a Plant

Dependent Variable

?

Constants

Amount of water

Size of the pot

Amount of light

Type of soil

Type of water

If the temperature (IV) is increased (increased, decreased, or changed), then the growth of a plant (DV) will increase (increase or decrease).

EXPLAIN

Now that I have my **testable question**

How does the temperature affect the growth of a plant?

and **hypothesis,**

If the temperature is increased, the growth of the plant will increase!

I would get my experiment set up!

What **materials** would I need for this experiment?

EXPLAIN

Remember those **constants**? Those are all of the things that need to **stay the same** during my experiment!

Constants

Amount of water

Size of the pot

Amount of light

Type of soil

Type of water

So, I need 2 pots that are the **same** and filled with the **same** soil.



I will give the plants the **same** water and the **same** amount of water.



8 sprays a day!

I will give the plants the **same** amount of light.



EXPLAIN

What is the only thing I am changing?

The temperature!

I will put one plant downstairs.

I will put one plant upstairs where it is 3 degrees **warmer**.



Downstairs



Upstairs=warmer

EXPLAIN Let's review!

Scientists start their experiment by making an observation!

Fill out your inquiry board to keep track of your experiment!
What will you measure and change?
What will stay the same?

Write a hypothesis. This is a prediction of what you think will happen.

Test your hypothesis and follow the procedure of your experiment!

Record your results! What did you find out?

TRY AT HOME

Look at these AMAZING science experiments!



[Fun With Gas](#)



[Diet Coke & Mentos](#)



[Airplane Treadmill](#)



[Biscuit Bullet?](#)



[Exploding Water Heater](#)



[Superhero Myths](#)

1. Click the experiment you want to watch!
2. Can you figure out what the DV Dependent Variable was in their experiment?
3. Try another video!

Remember that the DV is what WE MEASURE!

While watching the video, ask yourself “What are they measuring?”

ONLINE ELABORATE

Is soil needed for a plant to grow?

[Click this link](#) to read an article and watch a video about the effect on plants with and without soil.

Can Plants Grow Without Soil?



If you want to have the words read aloud to you, click this button on the website!



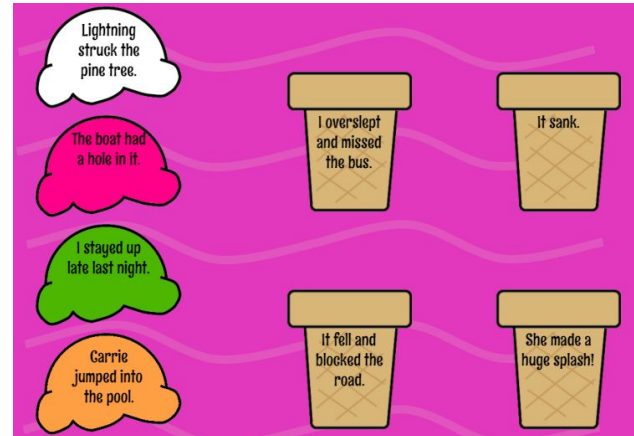
ONLINE ELABORATE

Let's practice cause and effect! Cause and effect is important to know when you are being a scientist!

You can see cause and effect in books, during your everyday life, and of course in science!

[Click here](#) to play this fun game to practice cause and effect!

1. Choose computer or tablet
2. Choose timed or not timed
3. Match the CAUSE ice cream to the EFFECT cone





SELF CHECK:

Go tell someone in your home your answers.

How did you do on this lesson?



Can you show someone at home your vocabulary chants for dependent and independent variable?

How do scientists start an experiment?

How can you find out what could help a plant grow more?