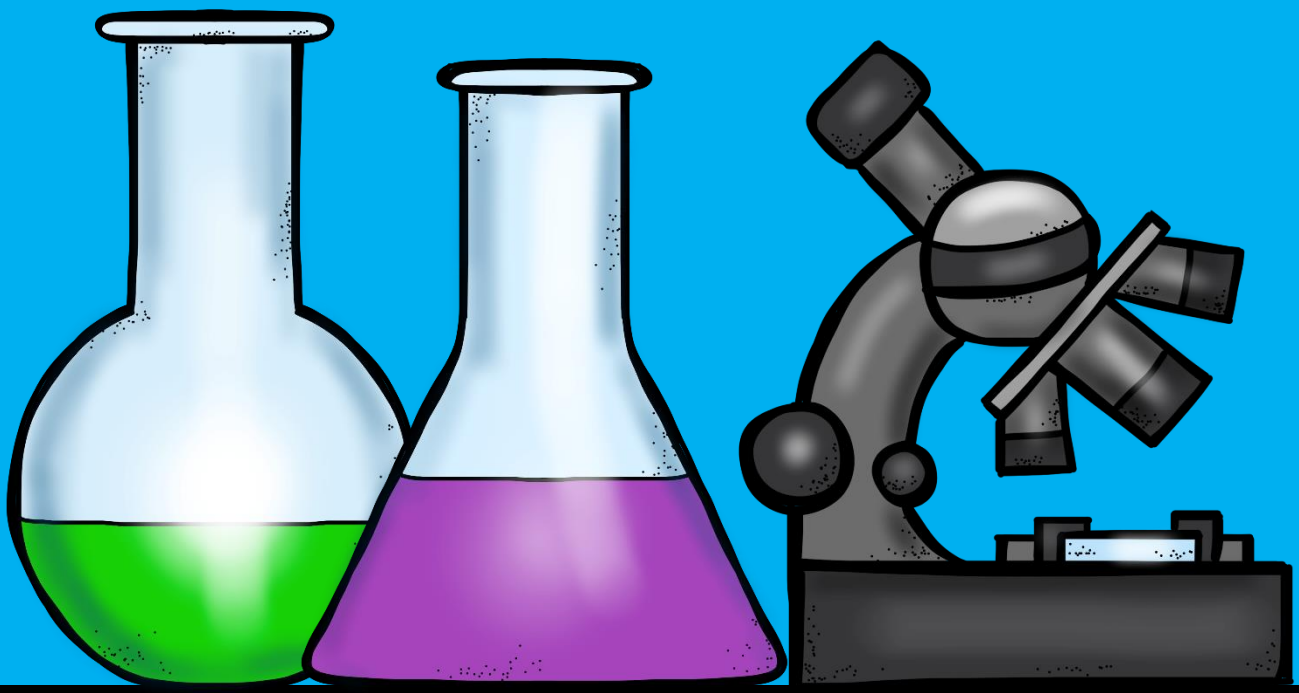
Variables



BINGO

Created by Kelly Ann

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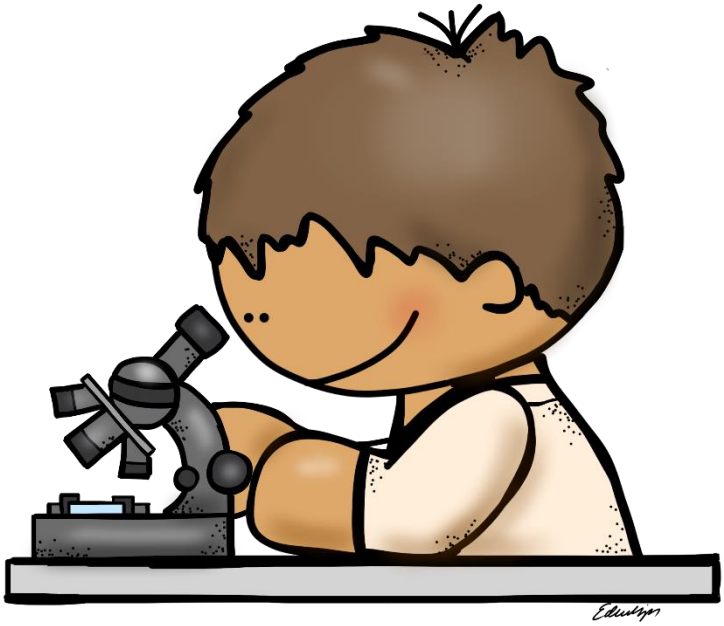


Directions for Use

Prep

1. Print the notes page, BINGO game cards, markers, and question calling cards (the markers look best in color, but can be printed in B&W).
2. It is recommended that you laminate all parts of the game for durability and long-term use.
3. Pre-cut or allow students to cut up the markers and place in a plastic baggie so they are ready for use.
4. Decide if a prize will be given to the winners.

Instructions

1. Distribute notes page, game card, and markers to each student.
2. Review the notes page with students. Explain that this page will be used during the game as a reference.
3. Before the start of the game, the caller (or teacher) will designate the way in which students can have BINGO. Some options include diagonal, across, down, 4-corners, etc.
4. Mix up the question cards before starting the game. The caller will pull a card and read it, then set the card in a separate pile. The students will look on their card (and refer to their notes sheet if needed) to see if they have the word that goes in the blank. If so, they will place a marker on the answer.
5. If a student calls BINGO, the caller will check their card to ensure they have the correct answers to the questions that were called.
6. After a winner is determined, students clear their boards and the game can begin again.

Variables Notes

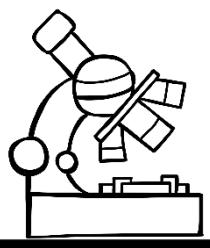
- Experiments are a great way to observe cause and effect relationships.
- By conducting an experiment, you are problem solving and looking for answers.
- When planning an experiment, you must always consider your variables.
- In science, a variable is something that can be changed, controlled, or measured.
- There are 3 types of scientific variables.
    - Independent (the cause)
    - Dependent (the effect)
    - Controlled (the constants)
- The independent variable is what you are going to change and test.
- When you test an independent variable, you collect data by recording what happened.
- An experiment can only have one independent variable. This means that you should only change one factor at a time so that your results are valid.
- Valid means accurate and reliable.
- The dependent variable is what you measure or observe.
- In a cause and effect relationship, the dependent variable is the effect.
- Controlled variables are the constant factors that do not change when conducting an experiment.

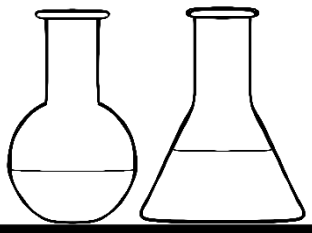
    For example, if you are comparing the growth of two different plants to see which one grows taller the amount of water and sunlight they each receive should be the same.
- Independent variable example:

    If you are testing 2 different battery brands to see which one lasts longer, your independent variable is the brand of battery because you are using different brands.
- Dependent variable example:

    If you are testing 2 different battery brands to see which one lasts longer, your dependent variable is the amount of time it takes to use up the batteries, because it depends on the brand.
- Controlled variables example:

    If you are testing 2 different battery brands to see which one lasts longer, you should test them both in the same kind of device, such as a flashlight.





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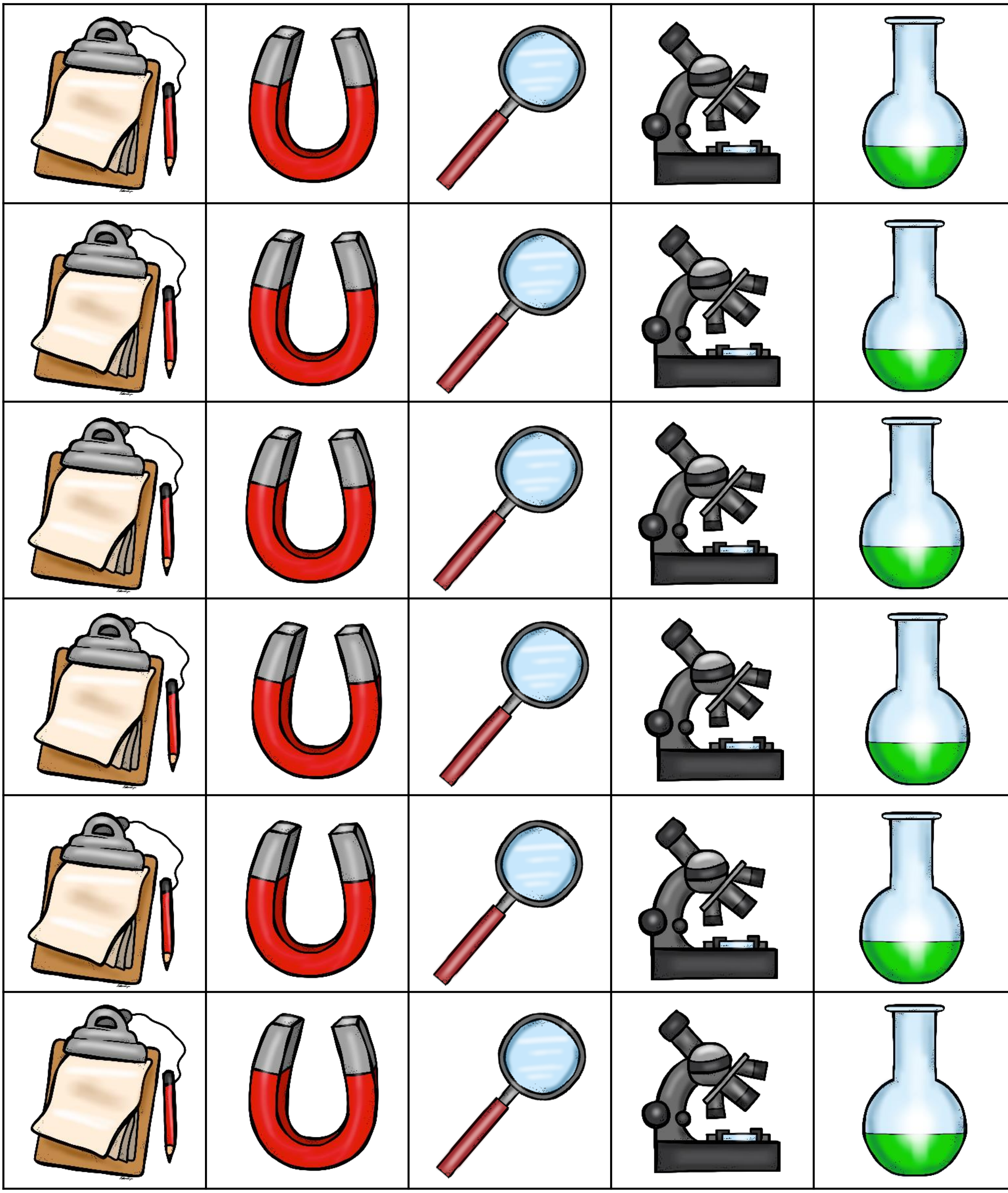
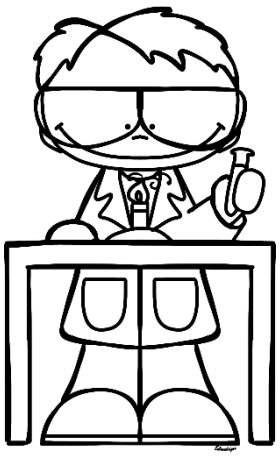
Markers

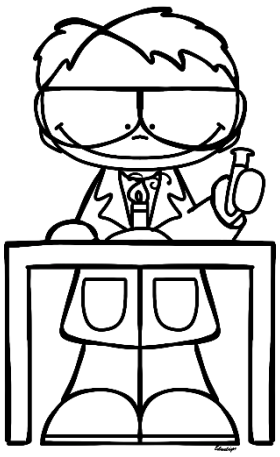
Cut, laminate (recommended), and place markers in baggie for repeated use. One sheet per student (includes extras). Any other type of marker can also be used.





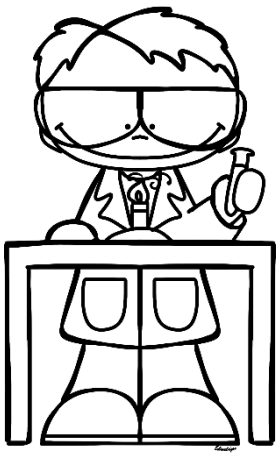
Variables BINGO

relationships	variable	experiment	one (1)	controlled
independent	dependent	test	cause	effect
data	reliable	FREE 	valid	constants
three (3)	measure	brand	time	same
type	laundry	machine	ball	frog



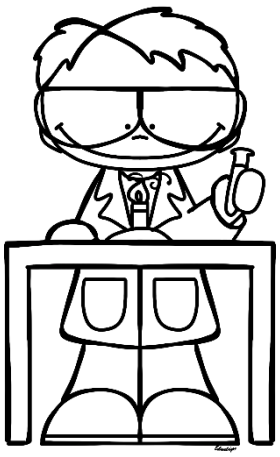
Variables BINGO

machine	constants	ball	one (1)	measure
independent	test	dependent	controlled	effect
type	reliable	FREE 	frog	variable
three (3)	cause	experiment	time	same
data	laundry	relationships	brand	valid



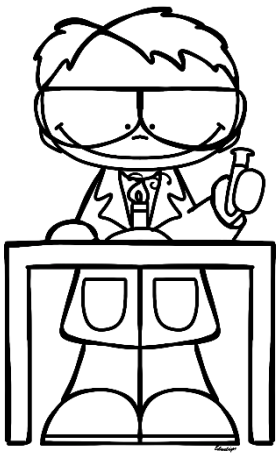
Variables BINGO

valid	machine	constants	ball	one (1)
measure	independent	test	dependent	controlled
effect	type	FREE 	reliable	frog
variable	three (3)	cause	experiment	time
same	data	laundry	relationships	brand



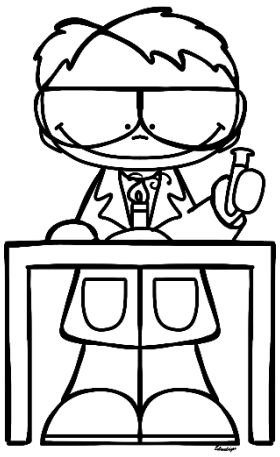
Variables BINGO

brand	valid	machine	constants	ball
one (1)	measure	independent	test	dependent
controlled	effect	FREE 	type	reliable
frog	variable	three (3)	cause	experiment
time	same	data	laundry	relationships



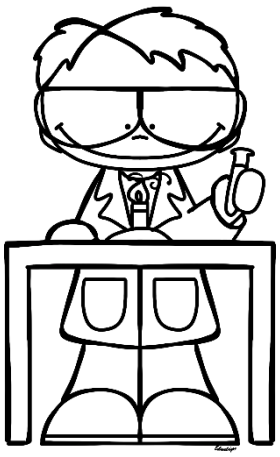
Variables BINGO

relationships	brand	valid	machine	constants
ball	one (1)	measure	independent	test
dependent	controlled	FREE 	effect	type
reliable	frog	variable	three (3)	cause
experiment	time	same	data	laundry



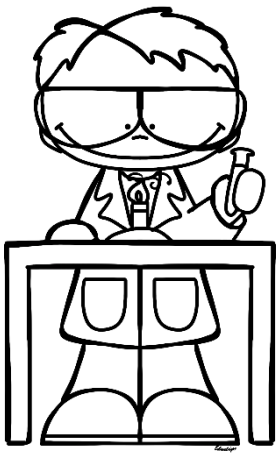
Variables BINGO

laundry	relationships	brand	valid	machine
constants	ball	one (1)	measure	independent
test	dependent	FREE 	controlled	effect
type	reliable	frog	variable	three (3)
cause	experiment	time	same	data



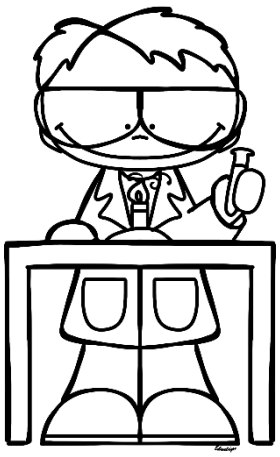
Variables BINGO

data	laundry	relationships	brand	valid
machine	constants	ball	one (1)	measure
independent	test	FREE 	dependent	controlled
effect	type	reliable	frog	variable
three (3)	cause	experiment	time	same



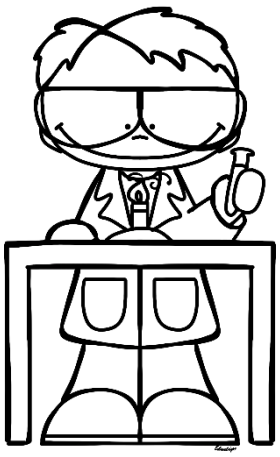
Variables BINGO

same	data	laundry	relationships	brand
valid	machine	constants	ball	one (1)
measure	independent	FREE 	test	dependent
controlled	effect	type	reliable	frog
variable	three (3)	cause	experiment	time



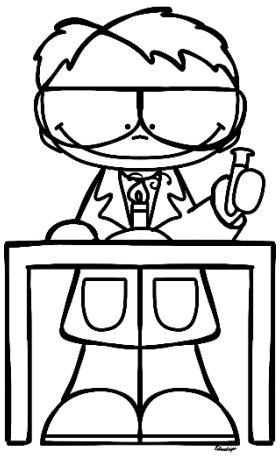
Variables BINGO

time	same	data	laundry	relationships
brand	valid	machine	constants	ball
one (1)	measure	FREE 	independent	test
dependent	controlled	effect	type	reliable
frog	variable	three (3)	cause	experiment



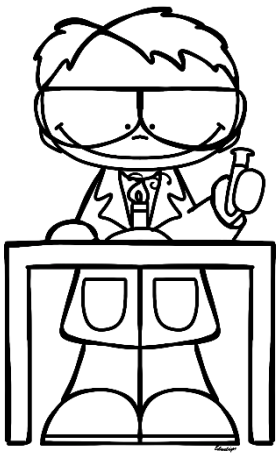
Variables BINGO

experiment	time	same	data	laundry
relationships	brand	valid	machine	constants
ball	one (1)	FREE 	measure	independent
test	dependent	controlled	effect	type
reliable	frog	variable	three (3)	cause



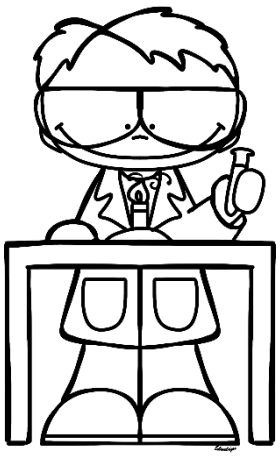
Variables BINGO

cause	experiment	time	same	data
laundry	relationships	brand	valid	machine
constants	ball	FREE 	one (1)	measure
independent	test	dependent	controlled	effect
type	reliable	frog	variable	three (3)



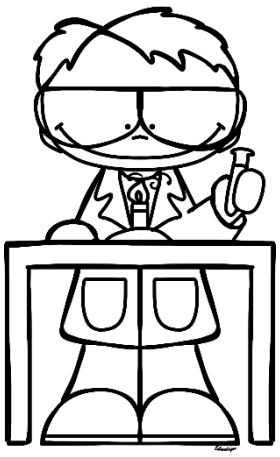
Variables BINGO

three (3)	cause	experiment	time	same
data	laundry	relationships	brand	valid
machine	constants	FREE 	ball	one (1)
measure	independent	test	dependent	controlled
effect	type	reliable	frog	variable



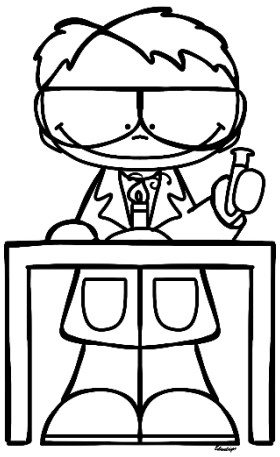
Variables BINGO

variable	three (3)	cause	experiment	time
same	data	laundry	relationships	brand
valid	machine	FREE 	constants	ball
one (1)	measure	independent	test	dependent
controlled	effect	type	reliable	frog



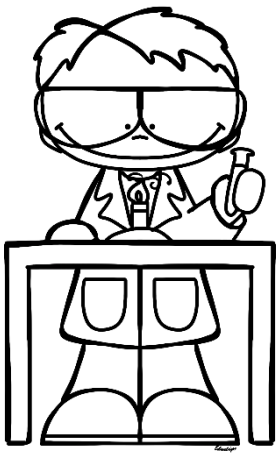
Variables BINGO

frog	variable	three (3)	cause	experiment
time	same	data	laundry	relationships
brand	valid	FREE 	machine	constants
ball	one (1)	measure	independent	test
dependent	controlled	effect	type	reliable



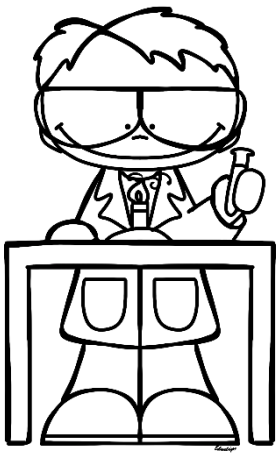
Variables BINGO

reliable	frog	variable	three (3)	cause
experiment	time	same	data	laundry
relationships	brand	FREE 	valid	machine
constants	ball	one (1)	measure	independent
test	dependent	controlled	effect	type



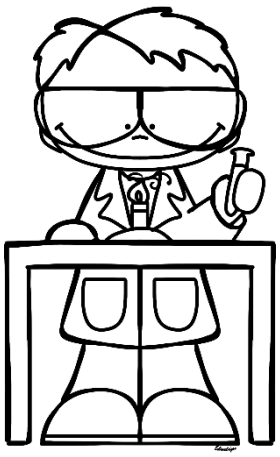
Variables BINGO

type	reliable	frog	variable	three (3)
cause	experiment	time	same	data
laundry	relationships	FREE 	brand	valid
machine	constants	ball	one (1)	measure
independent	test	dependent	controlled	effect



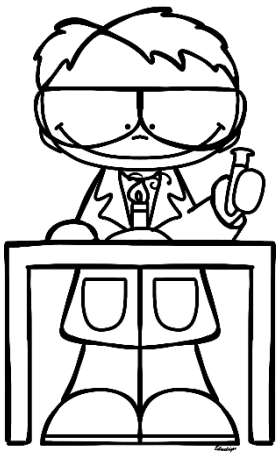
Variables BINGO

effect	type	reliable	frog	variable
three (3)	cause	experiment	time	same
data	laundry	FREE 	relationships	brand
valid	machine	constants	ball	one (1)
measure	independent	test	dependent	controlled



Variables BINGO

controlled	effect	type	reliable	frog
variable	three (3)	cause	experiment	time
same	data	FREE 	laundry	relationships
brand	valid	machine	constants	ball
one (1)	measure	independent	test	dependent



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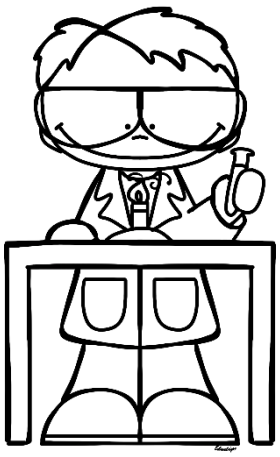
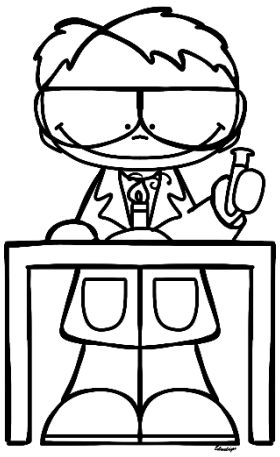
dependent	controlled	effect	type	reliable
frog	variable	three (3)	cause	experiment
time	same	FREE 	data	laundry
relationships	brand	valid	machine	constants
ball	one (1)	measure	independent	test



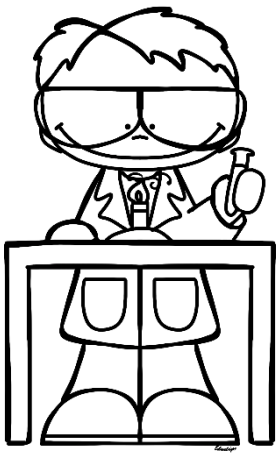
Variables BINGO

test	dependent	controlled	effect	type
reliable	frog	variable	three (3)	cause
experiment	time	FREE 	same	data
laundry	relationships	brand	valid	machine
constants	ball	one (1)	measure	independent



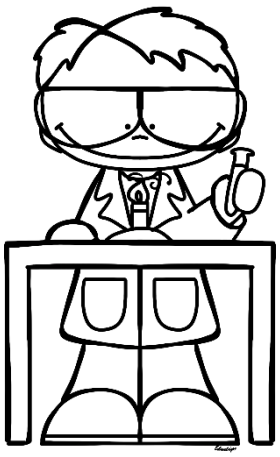
Variables BINGO

brand	laundry	dependent	controlled	effect
test	independent	frog	reliable	three (3)
cause	experiment	FREE 	time	ball
data	type	relationships	variable	valid
machine	constants	same	one (1)	measure



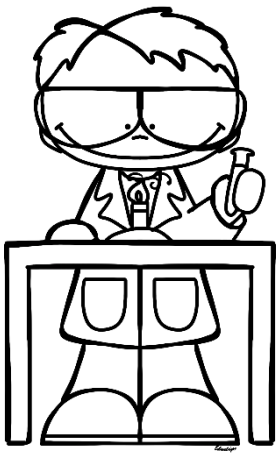
Variables BINGO

measure	brand	laundry	dependent	controlled
effect	test	independent	frog	reliable
three (3)	cause	FREE 	experiment	time
ball	data	type	relationships	variable
valid	machine	constants	same	one (1)



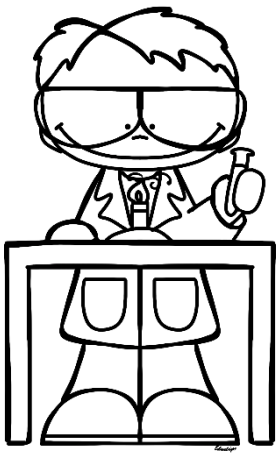
Variables BINGO

one (1)	measure	brand	laundry	dependent
controlled	effect	test	independent	frog
reliable	three (3)	FREE 	cause	experiment
time	ball	data	type	relationships
variable	valid	machine	constants	same



Variables BINGO

same	one (1)	measure	brand	laundry
dependent	controlled	effect	test	independent
frog	reliable	FREE 	three (3)	cause
experiment	time	ball	data	type
relationships	variable	valid	machine	constants



Variables BINGO

		FREE 		

Fill in the blank:

Experiments are a great way to observe cause and effect _____.

Hint: It begins with an "r."

Answer: relationships

Fill in the blank:

When planning an experiment, you must always consider your independent _____.

Answer: variable

Fill in the blank:

By conducting an _____, you are problem solving and looking for answers.

Answer: experiment

How many independent variables can you have when conducting an experiment?

Answer: one (1)

How many types of scientific variables are there?

Answer: three (3)

Fill in the blank:

The 3 types of scientific variables are:

independent, dependent, and _____.

Answer: controlled

Fill in the blank:

The 3 types of scientific variables are:

_____, dependent, and controlled.

Answer: independent

Fill in the blank:

The 3 types of scientific variables are:

independent, _____, and controlled.

Answer: dependent

Fill in the blank:

The independent variable is what you will change and _____.

Answer: test

Fill in the blank:

The independent variable is the _____ and the dependent variable is the effect.

Answer: cause

Fill in the blank:

The independent variable is the cause and the dependent variable is the _____.

Answer: effect

It is important to collect _____, or information, during your trials.

Answer: data

Fill in the blank:

You can only have one independent variable so that your results are valid, which means _____.

Hint: This means you can rely on the results.

Answer: reliable

Fill in the blank:

When your results are _____, it means they are accurate and reliable.

Answer: valid

Fill in the blank:

Controlled variables are the factors that do not change. These are things that are _____.

Hint: It begins with the prefix "con-."

Answer: constants

Fill in the blank:

The dependent variable is what you will _____ or observe.

Hint: It begins with an "m."

Answer: measure

Fill in the blank:

If you test 2 different battery brands, the independent variable is the _____ of the battery.

Answer: brand

Fill in the blank:

If you test batteries to see which lasts longer, the dependent variable is the amount of _____ the batteries last.

Answer: time

If you test 2 different battery brands to see which lasts longer, should you test them in the same device or different devices?

Answer: same

Fill in the blank:

If you test 2 different types of laundry soap for better cleaning, the independent variable is the _____ of laundry soap.

Answer: type

Fill in the blank:

If you test 2 different types of laundry soap for better cleaning, the dependent variable is how clean the _____ becomes.

Answer: laundry

Fill in the blank:

If you test 2 different types of soap for better cleaning, using the same washing _____ settings is a controlled variable.

Answer: machine

Fill in the blank:

If you want to see which ball bounces higher, the independent variable is the type of _____.

Answer: ball

Fill in the blank:

If you want to see which type of frog jumps farther, the independent variable is the type of _____.

Answer: frog

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