

SCIENTIFIC METHOD

**For
Special
Ed**



INCLUDES GOOGLE SLIDES



This unit was created with this guy in mind. He has autism and an intellectual disability. He is a non-reader, and loves the sound of piano keys. With some support he is able to do this unit, and enjoys the challenge. He is my tester!!

Scientific Method Unit

By
Christa Joy
Special Needs for Special Kids



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Also included in this resource as separate files:

- Lesson plans
- Links and directions to digital activities
- PowerPoint (**this is the book in the lesson plan**)
- Voice recorded PowerPoint
- Activities in black and white

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This unit contains 12 days of material that is in both printable and digital formats. I have included a detailed lesson plan to help you make the most of everything in this unit including how to add some group activities.

It comes in 2 separate files. One in color and one in black and white.

Scientific Method Lesson Plan

Preparation

- Print out a vocabulary board for each student to use throughout unit
 - Laminate or place in page protector
- Book
 - Print out, laminate, and bind
 - OR your students can listen to the pre-recorded version
- Vocabulary cards
 - Print out a set of cards onto cardstock and laminate
 - Make one set for each student and also one for the teacher to use in I Spy games

Preassessment (do day 1 before starting lesson)

- Choose the form of the assessment
- Give the assessment to assess what
- I cannot emphasize enough how important growth, this preassessment is so important

Teaching Tips

1. **Color Coding:** this is a really easy activity. Outline or color in an emoji the corresponding picture symbols task.
 - a. For more info, read more here <https://specialneedsforspecialdifferentiation/>
 - b. I also have a blog post on doing this <https://specialneedsforspecialdifferentiation.com/3-ways-easily-and-effectively/>
2. **Make your own copies of the activity** yesterday. For that reason:
 - a. I often complete the activity that I could use year after year
 - b. My copies were also helpful more support or as a way for work.

Quick Look

Day	Activity	Day	Activity
1	<ul style="list-style-type: none"> • Book • Vocab cards activity • Circle map 	8	<ul style="list-style-type: none"> • Book • Experiment #2
2	<ul style="list-style-type: none"> • Book • Vocab cards activity • Putting the steps in order 	9	<ul style="list-style-type: none"> • Book • Vocab cards activity • Close worksheet
	<ul style="list-style-type: none"> • Book • Vocab cards activity 	10	<ul style="list-style-type: none"> • Book • Close worksheet

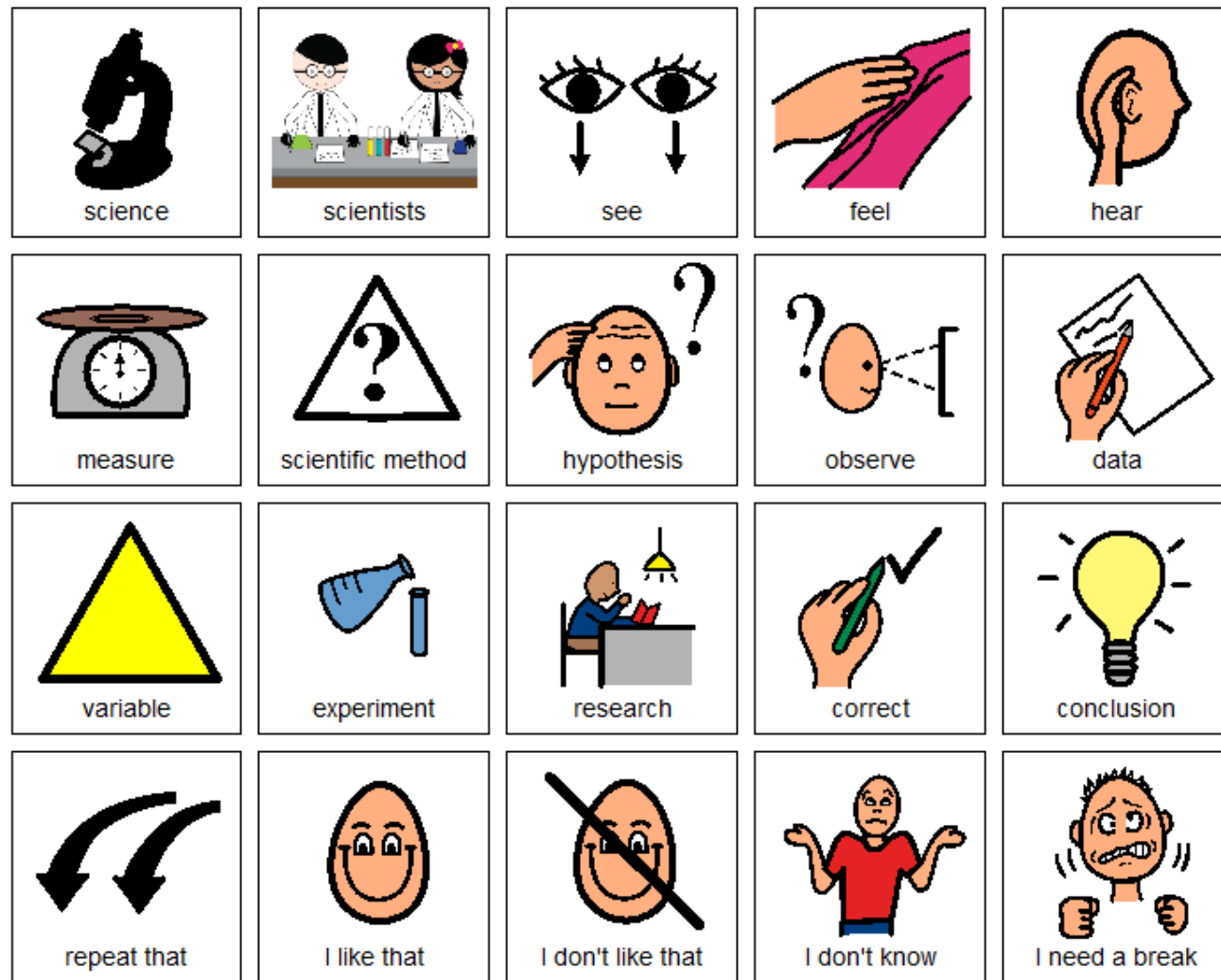
Day 3

Activity	Notes	Materials
Read or listen to a recording of the book (10 minutes)	<ul style="list-style-type: none"> • Read through the story, asking lots of questions • Continue to make connections between book and vocabulary board 	<ul style="list-style-type: none"> • Book • Vocabulary board
Vocabulary cards I Spy Game (10 minutes)	<ul style="list-style-type: none"> • I play this game see description on day 2 • Today, try to give clues about the card your student needs to find <ul style="list-style-type: none"> ◦ Read definition ◦ Show real photo that relates to card from book ◦ Describe the picture • Discuss relevant points on the card <ul style="list-style-type: none"> ◦ You can also play this game in this manner having them find the symbol on their vocabulary board 	<ul style="list-style-type: none"> • Vocabulary cards (student set and teacher set) • Vocabulary board
Sequencing Activity review (5 minutes)	<ul style="list-style-type: none"> • Review the sequencing activity completed yesterday 	<ul style="list-style-type: none"> • Sequencing activity completed yesterday
Putting Steps in order Activity (10 minutes)	<ul style="list-style-type: none"> • Complete the second sequencing activity using the level that best fits your students • Use color coding as needed 	<ul style="list-style-type: none"> • Sequencing activity • Scissors • Glue
Sharing (10 minutes)	<ul style="list-style-type: none"> • Each student shares their finished sequencing activity with the group using the communication method of their choice 	<ul style="list-style-type: none"> • Completed activity • Communication devices

📄 (Ctrl)

The lesson plans contain:

- Overall tips for teaching students with significant needs
- A quick look at what you will do each day
- Detailed instructions on how that day's lesson should run



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This unit comes with a vocabulary board.

Vocabulary boards are great for ALL students to assist with participation and engagement in group discussions.

Tips on how to use in the unit!!

These tests, or experiments, are carefully set up and controlled so another scientist can repeat it.



The first step any scientist does is come up with a good question. The question usually comes from an observation or a problem that needs to be solved.

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There is a 65 page book with this unit using simple text and photos.

It comes in a PowerPoint (so you don't have to print it out.) and an mp4 file.

Scientific method

6 step method of investigating the answer to a question.



scientist

Person who looks to answer a question about something they can observe using a specific method.



Independent variable

The thing a scientists changes from one experiment to the next.



Dependent variable

Those things a scientists watches or measures during an experiment.



data

Facts and observations collected to help answer a question.



research

Systematic investigation in order to establish facts and reach new conclusions.



Controlled variable

Things the scientist makes sure does NOT change during the experiment.



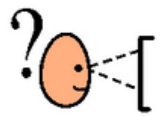
conclusion

What a scientist believes is true based on the results of the experiment.

There are 12 vocabulary cards that come in color and black and white.

- Included are suggestions for group activities to do with these each day.
- There is also a cut-and-paste activity.

observations



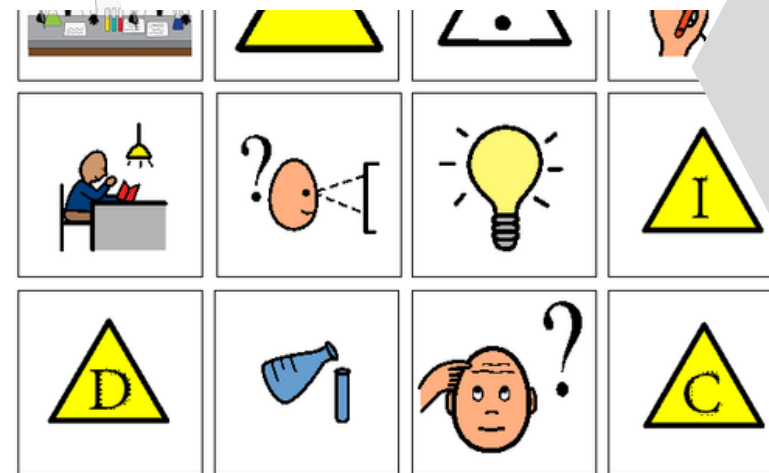
hypothesis



experiment



variables



Carefully watching for changes and noting characteristics of an object.

Person who looks to answer a question about something they can observe using a specific method.

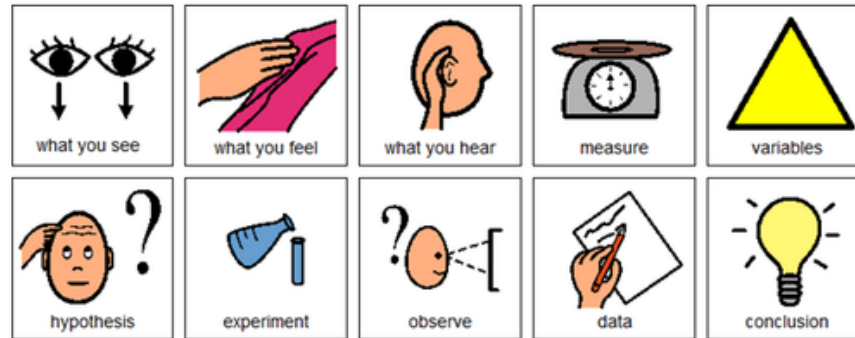
Set of steps set up to watch for any change.

Systematic investigation in order to establish facts and reach new conclusions.

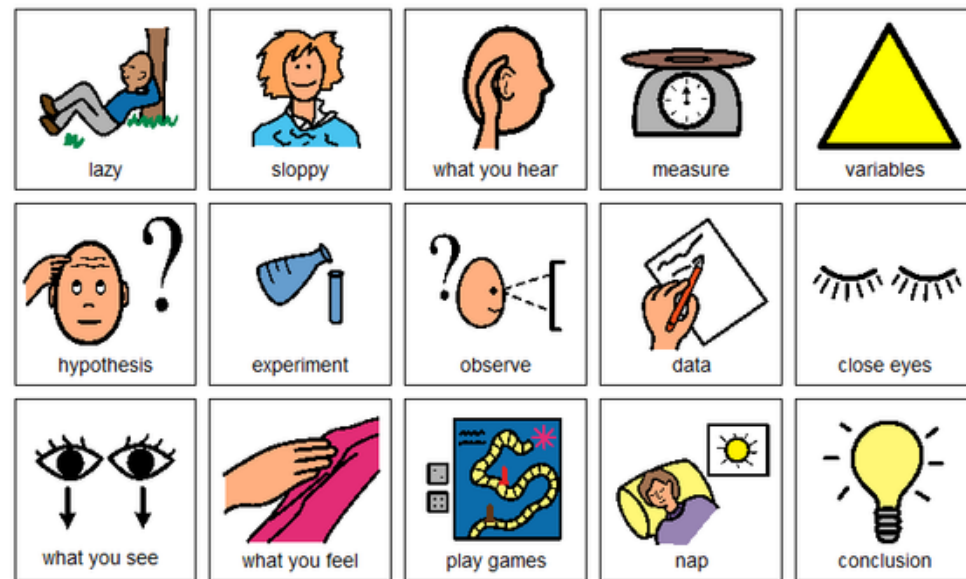
What a scientist believes is true based on the results of the experiment.

An educated guess about what you think will likely happen in an experiment.

Cut apart pictures and place in circle map about the scientific method.



Cut apart pictures and place in circle map **ONLY IF** they relate to the scientific method.



There is a circle map that reviews the main points from the book.


Circle maps are a great way for students to see the concept at a glance.

There are 2 versions:

- One is errorless
- One has wrong answers mixed in students will have to set aside.

The Scientific Method

- 1
- 2
- 3
- 4

5 

6

- 1
- 2
- 3
- 4
- 5
- 6









Cut out the following steps and put in the correct order on the previous page.

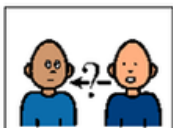
- Present conclusion
- Ask a question
- Conduct experiments
- Make a hypothesis
- Do research
- Analyze results

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Cut out the following steps and put in the correct order on the previous page.

 What will happen to the balloon in the freezer	 put balloon in the freezer	 I think the balloon will freeze
 what happened to balloon	 the balloon will freeze in the freezer	 look at other things in the freezer

Students will practice putting the steps of the scientific method in order using words on pictures. There is a second set using steps from an actual experiment in the unit.



ask a question



experiment



conclusion



gather data



hypothesis



research



will it sink or float?



put a balloon in the freezer



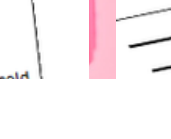
will it get heavier?



put different thin in the bathtub



Good hypothesis



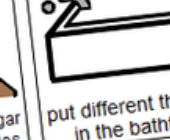
Bad hypothesis



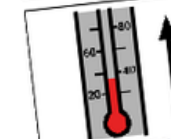
the apple floats



baking soda + vinegar make lots of bubbles



adding ketchup to mayonaise



will it change temperature?



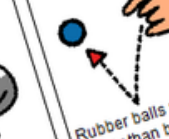
add ketchup to mayonaise



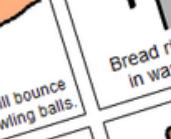
adding ketchup changes the



Cats dream about dogs



Rubber balls will bounce higher than bowling balls.



Bread rises faster in warm places.



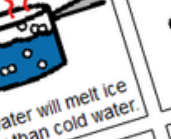
I am good at sewing.



I will be rich someday.



Hot water will melt ice faster than cold water.



Monkeys want to live near the ocean.



It is harder to bend a nail than a straw.



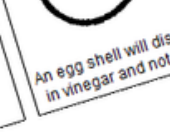
A bowling ball will knock down more pins than a tennis ball.



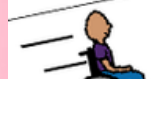
Dogs are better pets than cats.



An egg shell will dissolve in vinegar and not water.



Elephants want to be in the circus.



set up different ramps



Learn about how things go from liquid to gas.



The hamster fed cookies will get fatter than one eating carrots.



Learn about how things go from liquid to gas.



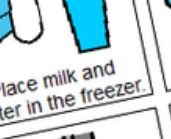
The hamster fed cookies will get fatter than one eating carrots.



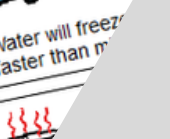
Water will freeze faster than m



search amount of calories in foods.



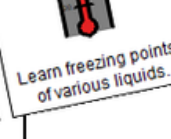
Place milk and water in the freezer.



Water will freeze faster than m



Hot water will vaporate faster than cold water.



Learn freezing points of various liquids.

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There are 3 sorting activities. Suggestions for differentiation and answer key are included.

The Scientific Method Experiment #1

Turning a penny green

My hypothesis

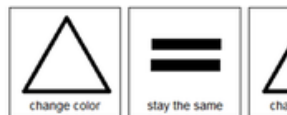
Penny #1 will

Penny # 2 will

Penny "3" will

The Scientific Method Experiment #1

Turning a penny green



The Experiment:

Container #1

1. Add 3 tablespoons of vinegar.
2. Place lid on.



Container #2

1. Add 3 tablespoons of vinegar.
2. Add 1 teaspoon of salt
3. Place lid on.



Container #1

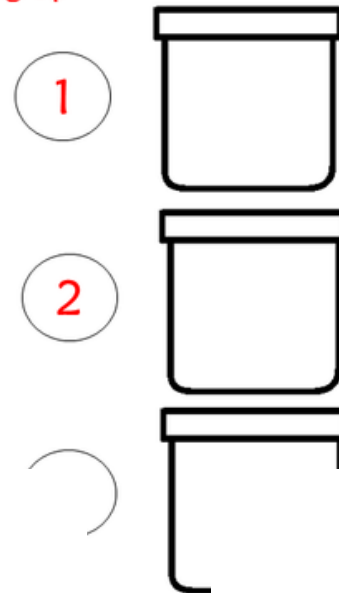
1. Add NOTHING.
2. Place lid on.



The Scientific Method Experiment #1

Turning a penny green

Setting Up



Put a paper towel and one penny in each container

The Scientific Method Experiment #1

Turning a penny green



What I knew

Then penny started off .

Chemical changes can cause a change in .

What I learned

The vinegar turned the penny . There was a chemical change.

Adding salt, made the penny . There was a chemical change.



There are 2 experiments included in this unit. The first one what happens when a penny is placed in vinegar.

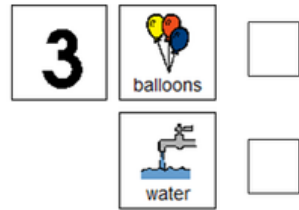
Detailed teacher instructions are included.

Scientific Method Experiment #2

Balloons in the freezer

People on my team: _____

Materials needed:

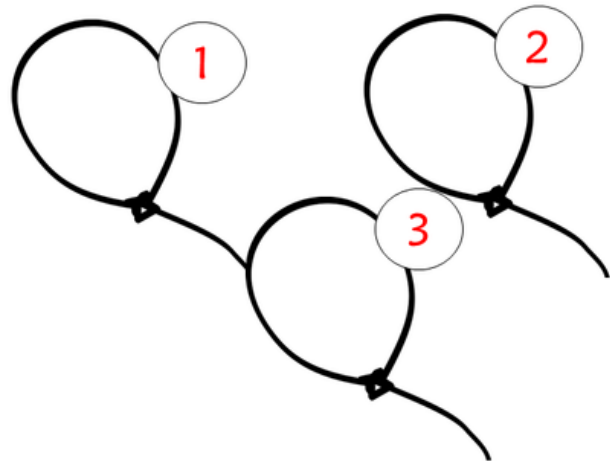


Scientific Method Experiment #2

Balloons in the freezer

Preparing Materials

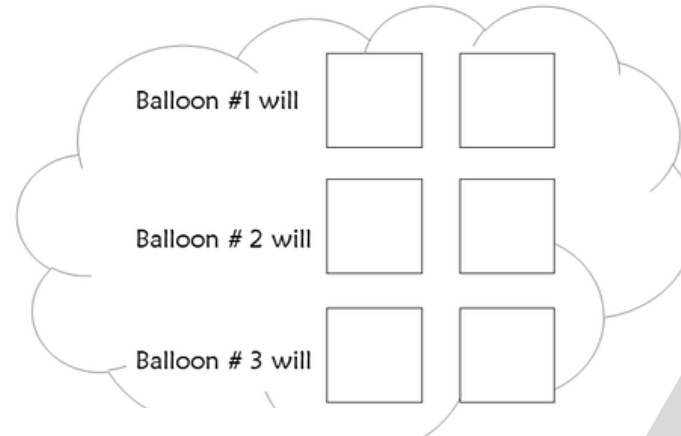
Label each balloon, then in each balloon, put:



Scientific Method Experiment #2

Balloons in the freezer

My hypothesis



Scientific Method Experiment #2

Balloons in the freezer

What I knew

Things in the freezer get .

Some liquids will in the freezer.

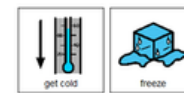
What I learned

Balloon #1 filled with

Balloon #2 filled with

Balloon #3 filled with

What I knew



What I learned






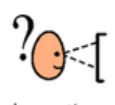






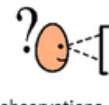




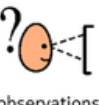


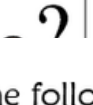



The second one looks at what happens when you put a balloon in the freezer with different substances.

Detailed teacher instructions are included.



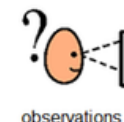
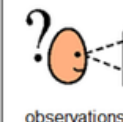
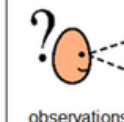
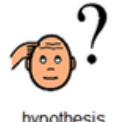
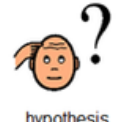

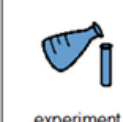



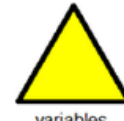
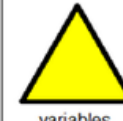
Neither of these experiments requires heat.

Scientific Method







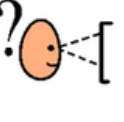
 data	 variables	 hypothesis		 research	 experiment
	 observations		 research		
 variables	 data		 hypothesis		 research
 hypothesis				 observations	 data
 research		 variables		 data	
 observations		 research	 data	 hypothesis	 variables

Place the following images in the empty squares on the previous page, completing the sudoku puzzle.

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 data	 research	 observations	 observations	 observations
 hypothesis	 hypothesis	 experiment	 experiment	 experiment
 experiment	 experiment	 variables	 variables	

Scientific Method

	 research		 data
			 research
 research	 hypothesis	 data	
	 observations		

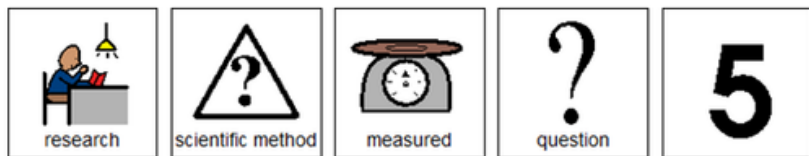
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There is a Sudoku puzzle in this unit as well. This is a great way to work with the new vocabulary!!

There are 2 versions plus answer keys.

The Scientific Method

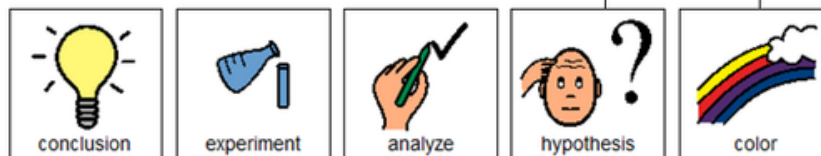
1. Scientists look for changes that can be .
2. Scientists use all senses.
3. Scientists use a very special method called the .
4. The scientific method starts by asking a .
5. Then, scientists do a lot of to better understand factors surrounding that question.



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The Penny Experiment: Identify the steps of the scientific method

1. The question we asked in this experiment was, would the penny change .
2. The was that the vinegar would change color.
3. Next, we ran an to test our hypothesis.
4. We collected data and the results.
5. Vinegar made the penny turn green was our .



Close worksheets are a great informal assessment. This unit has 10 questions that review facts from the book and 5 questions reviewing each experiment.

Answer key included.

Version 1

1. The scientific method is a very special way of answering a:



2. There are how many steps to the scientific method?



3. It is important that we study things that can be:



4. After doing some research, we can come up with an educated guess about what will happen called a:



5. After we have a hypothesis, we run the

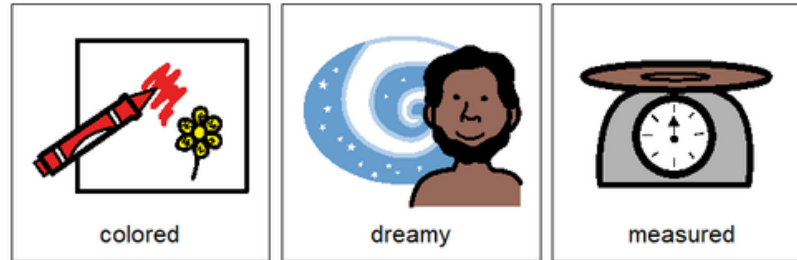


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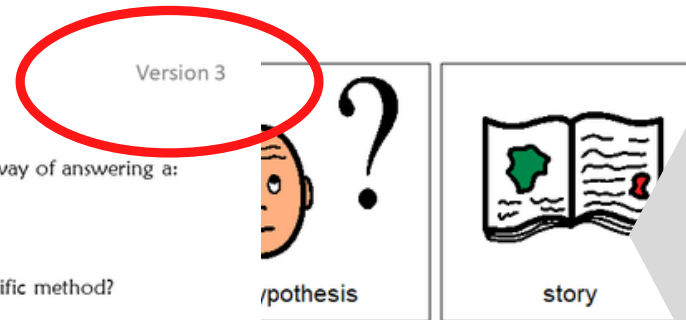
Version 2

Print onto cardstock or mount on index cards. Cut pictures apart and show student answer choices for each question.

Q 3



Q 4



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Version 3

1. The scientific method is a very special way of answering a:

- A. Question
- B. Problem
- C. Song

2. There are how many steps to the scientific method?

- A. 10
- B. 6
- C. 2

3. It is important that we study things that can be:

- A. Colored
- B. Dreamy
- C. Measured

4. After doing some research, we can come up with an educated guess about what will happen called a:

- A. Experiment
- B. Hypothesis
- C. story

5. After we have a hypothesis, we run these to test it:

- A. Experiments
- B. Races
- C. Video games

6. We want to make sure how many variables change at one time?

- A. 6
- B. 1
- C. 4

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FINALLY the assessment!! There are 3 versions.

- 10 questions with 3 picture choices for each question
- cut out the answer choices and glue them on index cards
- traditional multiple choice

Answer key included.

Watch the movie on the Scientific Method

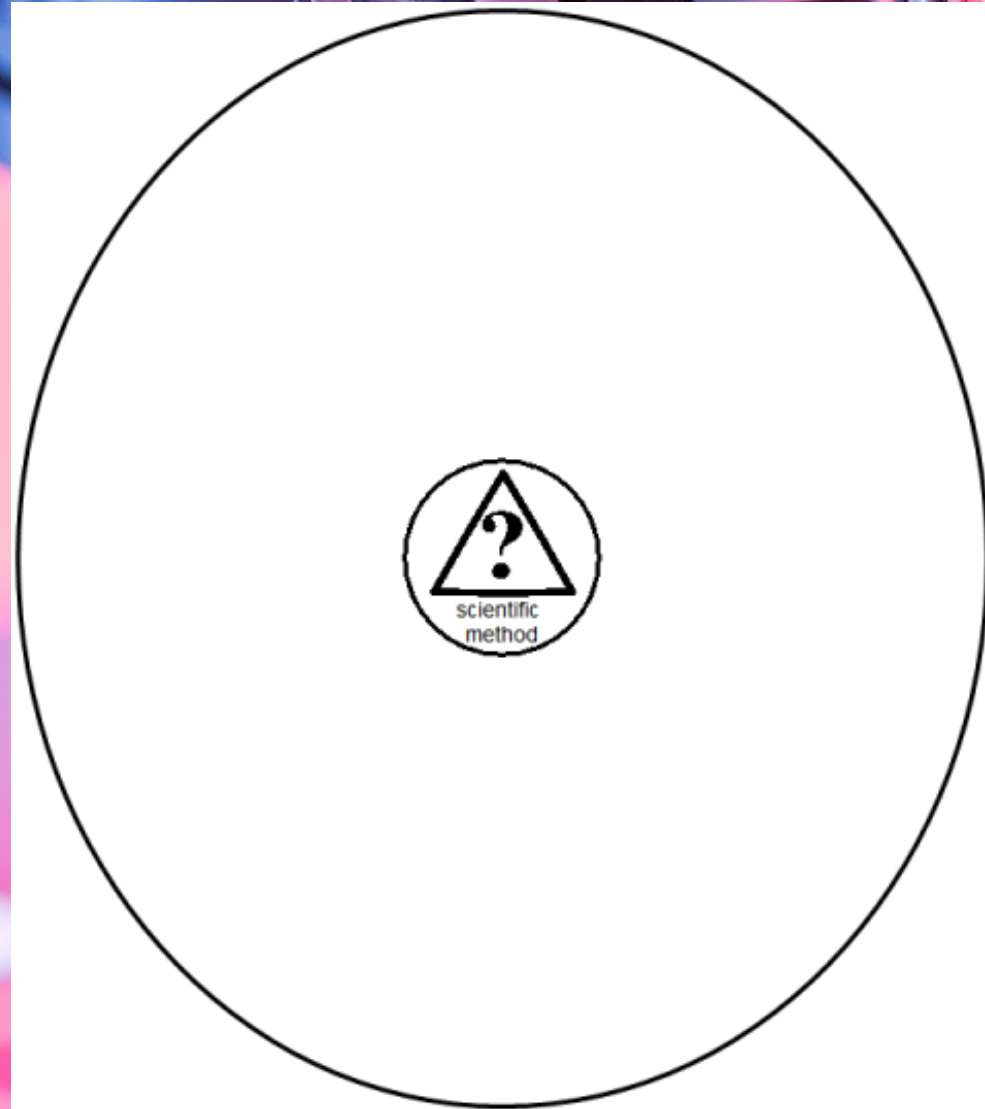
In this step, we are looking at all the data and observations we wrote down during our experiment. We start to look for patterns or things that seem the same.



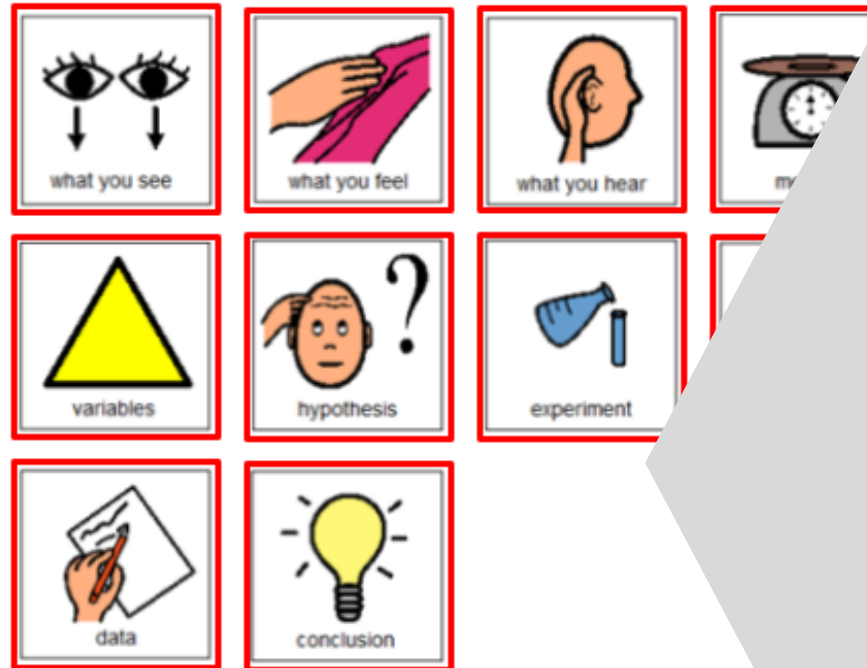
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This unit also has digital activities. There is a movie version of the books students can listen to read aloud.

Great for review



Place the pictures in the circle map about the scientific method.



The digital activities have students click and drag their answers.

perfect for all learning levels

1

2

3

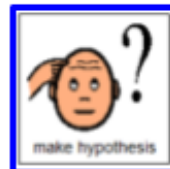
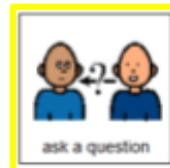
4

5

6



Put the steps of the scientific method in order.



There are 2 sets of slides. One set has color-coding for more support.

The Scientific Method Experiment #1

Turning a penny green

Testing my hypothesis:

	Prediction of color Change	Result of Color Change (wait 3+ hours)
Container #1		
Container #2		
Container #3		

Fill in the chart.

- What did you predict would happen to each penny?
- What actually happened to each penny?



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Turning a penny green

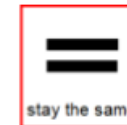
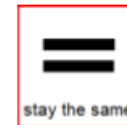
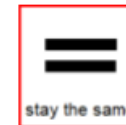
My hypothesis

Penny #1 will

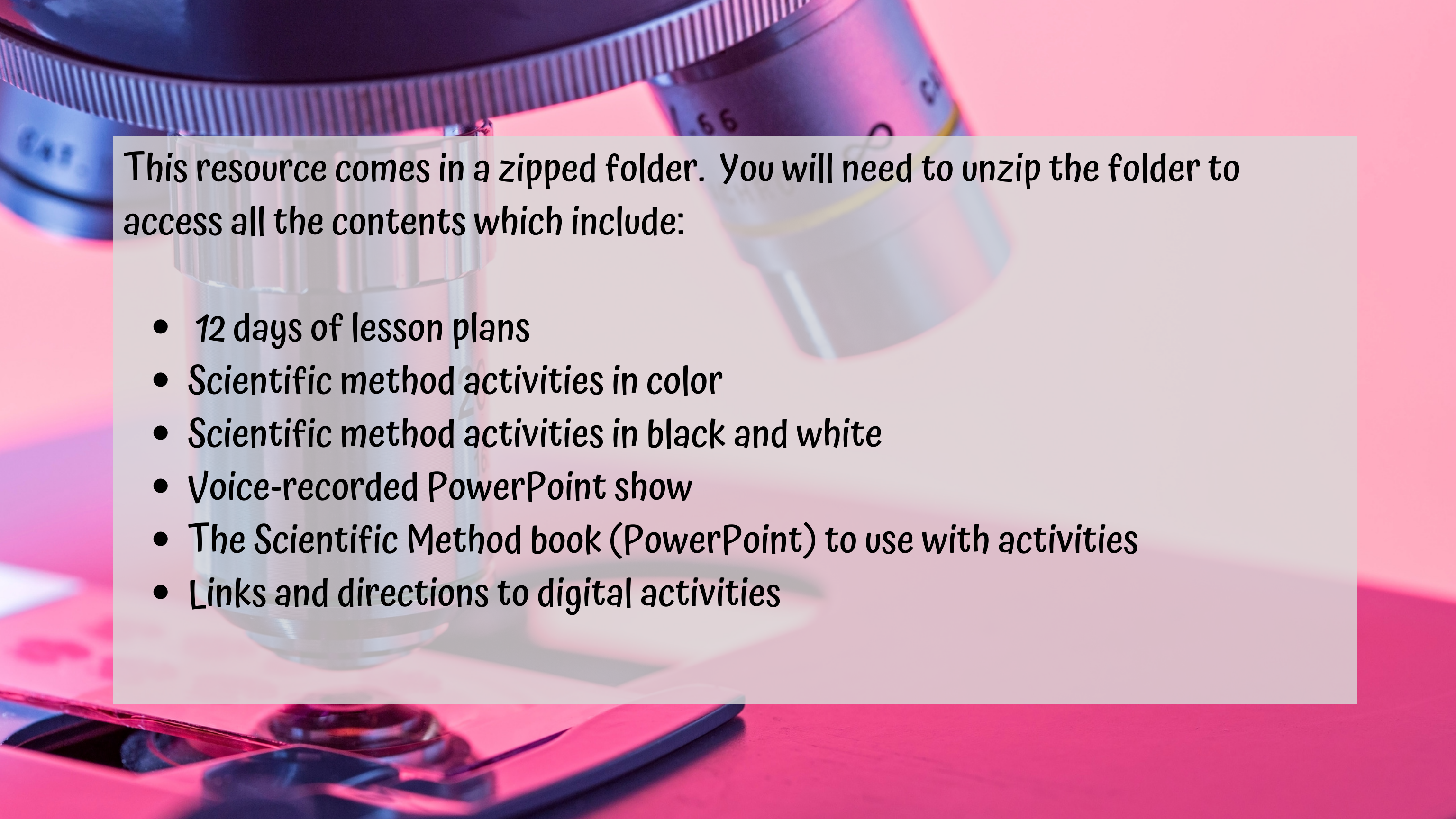
Penny # 2 will

Penny # 3 will

Choose from the pictures below to complete your hypothesis.



The 2 experiments also come in a digital format.



This resource comes in a zipped folder. You will need to unzip the folder to access all the contents which include:

- ***12 days of lesson plans***
- ***Scientific method activities in color***
- ***Scientific method activities in black and white***
- ***Voice-recorded PowerPoint show***
- ***The Scientific Method book (PowerPoint) to use with activities***
- ***Links and directions to digital activities***