

# Unit #1

Content Area: **Science**  
Course(s): **Science 5**  
Time Period: **December**  
Length: **Trimester 1**  
Status: **Published**

## Unit Overview

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In this unit, students investigate the properties of matter by dissolving everyday chemicals to make solutions and by exploring simple yet surprising chemical reactions. Through these investigations, students begin to build conceptual models for the particulate nature of matter.

## Priority Standards

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- 5-PS1-1: Develop a model to describe that matter is made of particles too small to be seen.
- 5-PS1-2: Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.
- 5-PS1-3: Make observations and measurements to identify materials based on their properties.
- 5-PS1-4: Conduct an investigation to determine whether the mixing of two or more substances results in new substances.

SCI.5-PS1-1	Develop a model to describe that matter is made of particles too small to be seen.
SCI.5-PS1-2	Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.
SCI.5-PS1-3	Make observations and measurements to identify materials based on their properties.
SCI.5-PS1-4	Conduct an investigation to determine whether the mixing of two or more substances results in new substances.
3-5-ETS1-3	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

## Learning Targets

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- I can demonstrate an understanding of the Scientific Method & Engineering Design Process.
- I can measure and graph quantities to provide evidence that regardless of the type of change, the total weight of matter is conserved.
- I can develop a model to describe that matter is made of particles too small to be seen.
- I can make observations and measurements to identify materials based on their properties.
- I can conduct an investigation to determine whether the mixing of two or more substances results in new substances.

## **Essential Questions**

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### Lesson 1

Are Magic potions real?

### Lesson 2

Could you transform something worthless into gold?

### Lesson 3

What would happen if you drank a glass of acid?

### Lesson 4

What do fireworks, rubber, and Silly Putty have in common?

### Lesson 5

Why do some things explode?

## **Materials and Resources**

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Mystery Science Lab Sheets & Assessments

Readworks readings

Student Readers (English & Spanish Carolina Science Kits)

[generationgenius.com](http://generationgenius.com)

Atom's Family Packet (Google Drive)

Periodic Table of Elements

<chrome-extension://bpmcpldpdmajfigpchkicefoigmkfalc/views/app.html> (powerpoint)

<http://sciencespot.net/Media/atomsfam.pdf> (worksheets)

Teachers Pay Teachers:

Supplemental mystery science papers

<https://www.teacherspayteachers.com/Product/Molecule-Learning-Stations-Intro-to-Modeling-Molecules-with-QR-code-fun-850361>

<https://www.teacherspayteachers.com/Product/NGSS-Matter-and-Its-Interactions-Bundle-241935> (Separating Mixtures Lab, Oil Spills Lab, Apples and Oranges Lab, Talk about Dense Lab,)

<https://www.teacherspayteachers.com/Product/NGSS-Aligned-Chemical-Reactions-Lab-5-PS1-4-and-MS-PS1-2-2314975>

Lego Atom Building Activity: <http://periodictable.com/>; <https://ed.ted.com/lessons/the-genius-of-mendeleev-s-periodic-table-lou-serico>

Readworks article: Talk about Dense

Better Lessons Online Plans & Activities

## Unit Assessments

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Mystery Science Assessment for each lesson

Mystery Science Unit Assessment

## Learning Plan

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Trimester 1

Time	Lesson	Priority Standard	Learning Targets	Lessons/Activities
Week 1	Science and Engineering Practice	3-5 ETS 1-2.6.1, 3-5 ETS1	Students will demonstrate an	1. Use the Promethean to display Google Slides to review the Scientific Method & Engineering Design Process <a href="https://docs.google.com/presentation/d/1rOTKmO7Jf18Pp_Gl_xhrCtizodLggj8pk4ylLtsqTwo/edit?usp=sharing">https://docs.google.com/presentation/d/1rOTKmO7Jf18Pp_Gl_xhrCtizodLggj8pk4ylLtsqTwo/edit?usp=sharing</a>

Slidesh -2, understa 2. Review and discuss the slides together as a class.  
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ETS1 the  
.B.2 Scientifi  
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&  
Enginee  
ring  
Design  
Process.

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type of  
change,  
the total  
weight  
of  
matter is  
conserv  
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Day 1: Introduction Video & Discussion  
Day 2: Lab & Lab Paper  
Day 3 & 4: End of Video, Discussion & Teacher pay teacher worksheet to go along with lesson  
Day 5: Test: <https://docs.google.com/presentation/d/1tVNVK-R8qL7AsqhJ2CZWWhc01UmieuJ4w3oaJsG5rdrw/edit?usp=sharing>  
Key: <https://docs.google.com/presentation/d/1nT7uBgD0uEfOuLy1v3U4V3PRLv91gDurYRPdynaUmws/edit?usp=sharing>

Lesson  
2: I can  
Could 5- develop  
you PS1- a model  
transfo 1  
rm 5- to  
someth PS1- describe  
ing 2 that  
worthl matter is  
ess made of  
into particles  
gold? too  
small to  
be seen.

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Key: <https://docs.google.com/presentation/d/1nT7uBgD0uEfOuLy1v3U4V3PRLv91gDurYRPdynaUmws/edit?usp=sharing>

Lesson 3:	I can	Day 1: Introduction Video & Discussion
What	make	Day 2: Lab & Lab Paper
We would	observat	Day 3 & 4: End of Video, Discussion & Teacher pay teacher worksheet to go along with lesson
ek happen 5-	ions and	Day 5
4 if you PS1-	measure	<b>Test:</b> <a href="https://docs.google.com/presentation/d/1tVNVK-R8qL7AsqhJ2CZWhc01UmieuJ4w3oaJsG5rdrw/edit?usp=sharing">https://docs.google.com/presentation/d/1tVNVK-R8qL7AsqhJ2CZWhc01UmieuJ4w3oaJsG5rdrw/edit?usp=sharing</a>
drank a 3	ments to	<b>Key:</b> <a href="https://docs.google.com/presentation/d/1nT7uBgD0uEfOuLy1v3U4V3PRLv91gDurYRPdynaUmws/edit?usp=sharing">https://docs.google.com/presentation/d/1nT7uBgD0uEfOuLy1v3U4V3PRLv91gDurYRPdynaUmws/edit?usp=sharing</a>
glass	identify	
of	material	
acid?	s based	
	on their	
	properti	
	es.	

Day #1- Play the first three slides ( 2 videos & a discussion)

Lesson 4:	I can	Day #2 - Lab Day Slides 4 (Stop at Step 11 of 17 which is testing all substances, writing it down & clean up)
What	conduct	Day #3 - Mystery Goo (Slides 12 through 17. )
do	an	Day #4- Property of Matter Worksheet:
firewor	investig	<a href="https://drive.google.com/drive/u/0/my-drive">https://drive.google.com/drive/u/0/my-drive</a>
ks,	ation to	Day 5: Physical and Chemical Change:
We ks, 5-	determi	Video: <a href="https://www.youtube.com/watch?v=x49BtB5dOwg">https://www.youtube.com/watch?v=x49BtB5dOwg</a>
ek rubber PS1-	ne	Physical and Chemical Cut and Paste
5 and 4	whether	Day #6-Lab #4 Assessment
& Silly	the	Day 7- Genius Generation: Properties of Matter
6 Putty	mixing	Day 8- Genius Generation Quiz
have in	of two	Day 9 TPT Worksheet
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	results	
	in new	
	substanc	
	es.	

## Day 10 Atoms Family Packet

Day 6 Test: <https://docs.google.com/presentation/d/1tVNVK-R8qL7AsqhJ2CZWhc01UmieuJ4w3oaJsG5rdrw/edit?usp=sharing>

Key:

<https://docs.google.com/presentation/d/1nT7uBgD0uEfOuLy1v3U4V3PRLv91gDurYRPdynaUmws/edit?usp=sharing>

Lesson 5: Why We do ek some 7 things & explod 8 e?	5-PS- 1-1	I can develop a model to describe that matter is made of particles too small to be seen.	Day 1: Solid, Liquid and Gas Discussion & worksheet about how the particles look Day 2: Mystery Science Intro Day 3 Lab Day 1 Day 4 Lab Day 2 Day 5 Discussion of the results Day 6 Review of the gas particle <a href="https://www.youtube.com/watch?v=wclY8F-UoTE">https://www.youtube.com/watch?v=wclY8F-UoTE</a>  TPT worksheet  Day 7 Assessment
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\*I can develop a model to describe that matter is made of particles too small to be seen.

Review concepts:

Week 9 Review & Unit Test

PS1-1  
PS1-2  
PS1-3  
PS1-4

\*I can conduct an investigation to determine whether the mixing of two or more substances results in new substances.

Genius Generation Videos:

1. Conservation of Matter 5-PS1-2
2. Particle Nature of Matter 5-PS1-1
3. Properties of Matter 5-PS1-3
4. Properties of Matter: Chemical vs. Physical 5-PS1-4

Unit Test Test: <https://docs.google.com/presentation/d/1tVNVK-R8qL7AsqhJ2CZWhc01UmieuJ4w3oaJsG5rdw/edit?usp=sharing>

Key:

<https://docs.google.com/presentation/d/1nT7uBgD0uEfOuLy1v3U4V3PRLv91gDurYRPdynaUmws/edit?usp=sharing>

\*I can make observations and measurements to identify materials based on their properties.

I can  
measure  
and  
graph  
quantities to  
provide  
evidence that  
regardless of the  
type of  
change,  
the total  
weight  
of  
matter is  
conserved.

### **Strategies for Multilingual Learners**

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- Continue practicing vocabulary
- Choice of test format (multiple-choice, essay, true-false)
- Vary test formats
- Read directions to student
- Provide study guides prior to tests



- Clarify test directions, read test questions
- Read test passages aloud (for comprehension assessment)

## **Strategies for Students in Need of Intervention**

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- Additional time on assignments
- Review of directions
- Review sessions
- Provide notes
- Support auditory presentation with visuals
- Work in progress check
- Tiered assessment
- Choice of test format (multiple-choice, essay, true-false)
- Read directions to student
- Highlight directions and key words
- Provide opportunities for cooperative partner work

## **Strategies for Enrichment**

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- Higher-level cooperative learning activities
- Provide higher-order questioning and discussion opportunities
- Tiered assessments
- Provide texts at higher reading level
- Extension activities

## Technology Integration

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Google Classroom Science

Mystery Science

Genius Generation

Nearpod

Crash Course Kids: <https://www.youtube.com/user/crashcoursekids>

## Interdisciplinary Connections

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ELA.L.WF.5.2 Demonstrate command of the convention of writing, including those listed under grade four foundation skills.

ELA.L.VL.5.2 Determine or clarify the meaning of unknown and multiple-meaning academic and domain-specific words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.

ELA.RI.CR.5.1 Quote accurately from an informational text when explaining what the text says explicitly and make relevant connections when drawing inferences from the text.

ELA.IW.5.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

ELA.SL.PE.5.1 Engage effectively in a range of collaborative discussions with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

5.DL.A.1 Understand how different visualizations can highlight different aspects of data. Ask questions and interpret data visualizations to describe and analyze patterns.

5.DL.A.2 Develop strategies to collect, organize and represent data of various types and from various sources. Communicate results digitally through a data visual (e.g. chart, storyboard, video representation).

5.DL.A.3 Collect and clean data to be analyzable (e.g., make sure each entry is formatted correctly, deal with missing or incomplete data).

5.DL.A.4 Using appropriate visualizations (i.e. double line plot, double bar graph), analyze data across samples.

5.G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

5.M.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

	four foundational skills.
ELA.L.VL.5.2	Determine or clarify the meaning of unknown and multiple-meaning academic and domain-specific words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.
ELA.RI.CR.5.1	Quote accurately from an informational text when explaining what the text says explicitly and make relevant connections when drawing inferences from the text.
MATH.5.M.A	Convert like measurement units within a given measurement system
ELA.W.IW.5.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
MATH.5.DL.A.1	Understand how different visualizations can highlight different aspects of data. Ask questions and interpret data visualizations to describe and analyze patterns.
MATH.5.DL.A.2	Develop strategies to collect, organize and represent data of various types and from various sources. Communicate results digitally through a data visual (e.g., chart, storyboard, video presentation).
MATH.5.DL.A.3	Collect and clean data to be analyzable (e.g., make sure each entry is formatted correctly, deal with missing or incomplete data).
MATH.5.DL.A.4	Using appropriate visualizations (i.e., double line plot, double bar graph), analyze data across samples.
MATH.5.G.A.2	Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
ELA.SL.PE.5.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

## 21st Century Life & Career Ready Practices

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- CRP7. Employ valid and reliable research strategies.
- CRP1. Act as a responsible and contributing citizen and employee.
- CRP11. Use technology to enhance productivity.
- CRP12. Work productively in teams while using cultural global competence.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP6. Demonstrate creativity and innovation.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.