

Middle School Science Sub Plans, 2 Weeks

Two complete week binders of middle school science, grades 6 to 8: one topic a day, on paper. Every day has individual work and a team task, and every task has a "say this" script.

PREVIEW

What is included

- Week 1 binder (68 pages) and Week 2 binder (66 pages): 134 pages
- 26 front pages: binder cover, important information, note to the sub, the week plan filled in, schedule, set index, class list, how it went, Monday opener
- 20 solo blocks (10 science sets, 10 calm blocks) and 10 team tasks for groups of four
- Every science set lists the NGSS standards it practices
- A "say this to the class" script for all 42 tasks: 2 or 3 sentences the sub reads out
- A core task and a ★ challenge in every science set and team task
- 10 optional games, each on that day's lessons, a fun way to end the class
- Answer keys for everything; color and ink-saver B&W, US Letter and A4

How it works

1. Leave both binders out. Each has its own filled-in plan with page numbers.
2. The sub reads the "say this" box out, then runs the day's science set in every period; students work on their own. Everyone does the core task, early finishers go on to the ★ challenge.
3. Calm block for any gap, team task for a block period or extra time, game for the last 15 minutes.
4. No prep and no tech: paper and pencil, print and go.

The 10 days: a science set, a team task and a game each day

1. **Day 1:** Density and Why Things Float · Team: The Size Scale Hallway **Whiteboard Quiz Game**
2. **Day 2:** States of Matter · Team: The Lab Week Plan **Paper Password**
3. **Day 3:** Food Chains and Webs · Team: Paper Helicopter Test **Class Feud**
4. **Day 4:** Forces and Motion · Team: Trout Stream Council **Classroom Millionaire**
5. **Day 5:** The Water Cycle · Team: The Mars Crew Debate **Mystery Box**
6. **Day 6:** Atoms and Molecules · Team: The Mystery Molecule Files **Whiteboard Quiz Game**
7. **Day 7:** Cells · Team: Is It Alive? The Museum Card Sort **Paper Password**
8. **Day 8:** Rocks and the Rock Cycle · Team: The Quartz Grain's Journey **Class Feud**
9. **Day 9:** Kinetic and Potential Energy · Team: The Energy Olympics **Classroom Millionaire**
10. **Day 10:** Engineering Design: Criteria and Constraints · Team: The Paper Tower Challenge **Mystery Box**

What this preview shows: the note to the substitute, the Week 1 plan, more front pages, one page of every daily part, a full science set with its answer key, a calm block, a team task, the game types and one ink-saver page. Product pages are watermarked. Full product: 134 pages.



Note to the Substitute

Grades 6 to 8 · five days · every set runs from the printout alone

Thank you for covering my classes this week

Everything you need is in this binder. The weekly plan is filled in for you; the important information page and the class list are for the teacher (or you) to fill in. After the binder pages come the five days in order, Monday to Friday. Monday starts with a short opener (about 15 minutes), then each day has its work sets: **Science 1** is Monday's set, **Science 2** is Tuesday's, and so on to **Science 5** on Friday. Run the day's set in every period you teach that day. Each set is one period (45 to 55 minutes), stands alone, and has its own answer key at the back of the binder, so you never have to make anything up or know the subject. Every task starts with a short **Say this to the class** box under its title: read it out, and the class knows what to do and how to start.

Every science and team page has a core task first, then a ☆ challenge. Every student does the core task. Students who finish early go on to the ☆ challenge; it fills a few extra minutes, and nobody has to finish it.

Each day's work set is followed by that day's calm block, team task and game. The **calm block** is always allowed: for time left at the end, a loud class, or anyone who finishes early. The **team task** fills a period on its own. The **game** is optional: a fun way to end the class, or something for extra time. Fifteen minutes, from the script; items marked (calm) or (team) can be skipped if the class did not do that part.

Every science set names the Next Generation Science Standards (NGSS) middle school performance expectations it practices, on a small line under its title (for you, not the students). A sub plan set practices part of a performance expectation; it is review and practice, not a full assessment of it.

Each day has

- One Science set (one period, core task + ☆ challenge on every page)
- A calm and quiet block: learn 8 terms from the day's topic, then a quiet self-test
- A team task for groups of four
- A paper game from the script

If the class is loud

- Set a voice level with a number, 0 to 3, and use it all week (the Day 1 opener explains it).
- Switch to the calm block. Nobody needs to move.
- If a set is not working, stop it and use the calm block or the team task. Every set starts cold.

At the end of each day

Please fill in that day's line on the "How it went" page. It takes two minutes and I read every word.

For the teacher who bought this kit: if it worked well for your class, leaving a review on TpT helps other teachers find it and gives you credits toward future purchases. Thank you!

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This Week's Plan

Filled in for you: run the day's set in every period you teach. Keep it as it is, or use the blank schedule on the next page for your own order.

WHEN	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Start of class	**Meet Your Sub** p. 11 · 15 min, every period	Attendance, voice level	Attendance, voice level	Attendance, voice level	Attendance, voice level
Main work, every period	**Science 1** Density and Why Things Float p. 14	**Science 2** States of Matter p. 23	**Science 3** Food Chains and Webs p. 32	**Science 4** Forces and Motion p. 42	**Science 5** The Water Cycle p. 52
Early finishers or a loud moment	**Learn and Test: Matter Property Terms** p. 17	**Learn and Test: Heat and Matter Terms** p. 26	**Learn and Test: Ecosystem Terms** p. 35	**Learn and Test: Motion Terms** p. 45	**Learn and Test: Water in Nature Terms** p. 55
Block period or extra time	**The Size Scale Hallway** p. 19	**The Lab Week Plan** p. 28	**Paper Helicopter Test** p. 37	**Trout Stream Council** p. 47	**The Mars Crew Debate** p. 57
Last 15 minutes (optional): a fun way to end the class, or for extra time	**Whiteboard Quiz Game** p. 21	**Paper Password** p. 30	**Class Feud** p. 40	**Classroom Millionaire** p. 50	**Mystery Box** p. 59

How to use this plan

- Page numbers point to the first page of each set. Copy work sets and calm blocks one per student. Team tasks: one copy per group, plus any extra copies, cards or sheets the pages ask for. Copy any page that gets torn apart (field reports, templates, cards) one-sided, on its own sheet, so the page on its back stays whole. Game scripts are for you only (do not copy them); copy game boards and cards as their pages say.
- The calm block is always allowed: time left at the end, a loud class, or anyone who finishes early.
- On Monday the opener takes the first 15 minutes, so stop the set where the bell falls; finish page 3 as early-finisher work on Tuesday or leave it for another day.
- The game is optional: a fun way to end the class, or something for extra time.

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MS SCIENCE SUB PLANS WEEK 1

Middle School Science, 5 Days of Print and Go Work

Teacher _____

Room _____

Grade and classes _____

Week of _____

Everything a sub needs for five days is in this binder: a filled-in weekly plan, a blank schedule, the class list, and for every day one Science set, a calm block, a team task and a paper game. Each set is one period, stands alone, and has its own answer key. Nothing needs subject knowledge, a login or a projector.



Important Information

The page the sub reads first. Fill it in once and keep it current.

People to call

Office _____

Teacher next door _____

Nurse _____

Principal / admin _____

Tech help _____

Emergency procedures

Fire: exit and meeting point _____

Lockdown _____

Severe weather _____

Medical _____

Where the first aid kit is _____

Helpful students

_____

_____

_____

Students who need extra support

_____

_____

_____

Where things are

Attendance / how to take it _____

Paper, pencils, supplies _____

Hall passes _____

Copier, if the sub may use it _____

Class routines

Start of class _____

Bathroom _____

Phones _____

End of class _____

Weekly Schedule (Blank)

Your own order: write the set for each period (Monday: Science 1, Tuesday: Science 2, and so on) and the class next to each period. Cross out or rename periods to match the school day.

PERIOD / CLASS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Period 1 ____ – ____ Class: _____					
Period 2 ____ – ____ Class: _____					
Period 3 ____ – ____ Class: _____					
Period 4 ____ – ____ Class: _____					
Period 5 ____ – ____ Class: _____					
Period 6 ____ – ____ Class: _____					
Period 7 ____ – ____ Class: _____					

How to fill it in

- One set per period. Each set runs 45 to 55 minutes; if a period runs longer, the ☆ challenges fill a few minutes, or add that day's team task.
- Same subject all day? Write the day's set in every period you teach. Planning, lunch and duty periods: cross them out.
- On Monday the opener (15 minutes) comes first in every period, then the set.
- The game is optional: put it in the last 15 minutes of any period as a fun way to end the class, or use it for extra time. The calm block goes in any gap.

Set naming

Sets are named by subject and day: **Science 1** is Monday's set, **Science 2** is Tuesday's, and so on to **Science 5** on Friday. The set index lists every set with its minutes and page.

Set Index (1 of 3)

Every set in the binder with its length and page. Day = the weekday it is written for. Any science set works on any day; each game reviews its own day's set.

DAY	SET	WHAT IT IS	MINUTES	PAGE
SCIENCE, DAYS 1 TO 5				
1	**Science 1: Density and Why Things Float**	**Reviews:** density as mass divided by volume, why objects float or sink in water, and using density to identify a material. Reading and a worked example, an 8 row density table, 5 questions, a density lower, a star challenge on every page. Key included.	50	p. 14
2	**Science 2: States of Matter**	**Reviews:** the particle model of solids, liquids and gases, melting and boiling points, and reading a heating curve. Particle model reading and drawing, a melting and boiling point table, a heating curve with 6 questions, a star on every page. Key included.	50	p. 23
3	**Science 3: Food Chains and Webs**	**Reviews:** producers, consumers and decomposers, reading a food web, energy flow at about 10 percent per level, and what happens when a species disappears. Reading and vocabulary, a printed meadow food web to classify, 8 web questions, an energy flow table, a star on every page. Key included.	50	p. 32
4	**Science 4: Forces and Motion**	**Reviews:** balanced and unbalanced forces, finding the net force, speed equals distance divided by time, and reading a distance and time graph. Reading on forces and speed, 6 net force diagrams, an 8 row speed table, a distance and time graph, a star on every page. Key included.	50	p. 42
5	**Science 5: The Water Cycle**	**Reviews:** evaporation, transpiration, condensation, precipitation, runoff and infiltration, the roles of the sun and gravity, and rainfall data. Reading and a term match, a water cycle diagram to label, a rainfall table with 6 questions and a bar graph, a star on every page. Key included.	50	p. 52
MONDAY OPENER				
1	**Meet Your Sub**	Fifteen minutes at the start of every period on Monday: sub sheet, three questions, the agreement and voice levels. Spare: a keyed Science Myth or Fact.	15	p. 11

Class List and Dismissal

Names, what a sub must know, and how every student goes home. Copy one per class.

(B) bus (write the number) (W) walks (P) picked up (write who) (A) after-school program (O) other

☆ in the notes: a student who finds the core task easy may start with the challenge

#	STUDENT NAME	NOTES (ALLERGIES, NEEDS, HELPFUL, LEAVES EARLY)	HOME	BUS # / PICKED UP BY / PROGRAM
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
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16				
17				
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30				

How It Went

For the substitute. One line per day, two minutes at the end of each day. Check the boxes and go.

Monday

Sets done: _____ Class was: ☐ Great ☐ Fine ☐ Hard, see notes

Notes / stars of the day: _____

Tuesday

Sets done: _____ Class was: ☐ Great ☐ Fine ☐ Hard, see notes

Notes / stars of the day: _____

Wednesday

Sets done: _____ Class was: ☐ Great ☐ Fine ☐ Hard, see notes

Notes / stars of the day: _____

Thursday

Sets done: _____ Class was: ☐ Great ☐ Fine ☐ Hard, see notes

Notes / stars of the day: _____

Friday

Sets done: _____ Class was: ☐ Great ☐ Fine ☐ Hard, see notes

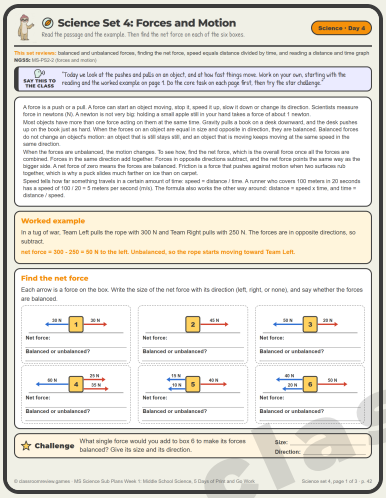
Notes / stars of the day: _____

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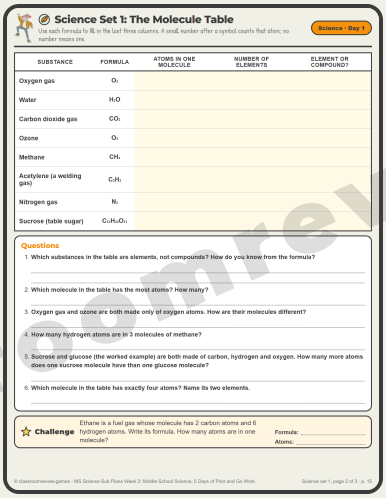
Binder cover, important information, schedule, set index, class list, how it went

ONE PAGE OF EVERY DAILY PART

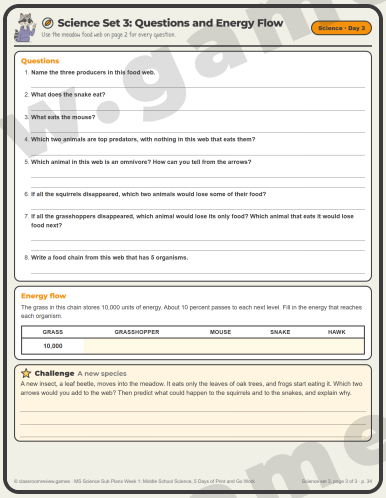
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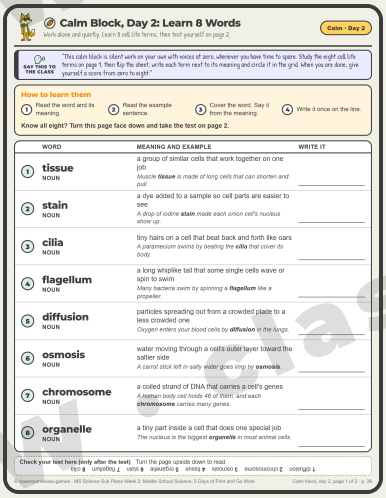
Science set: the lesson, Week 1 (solo)



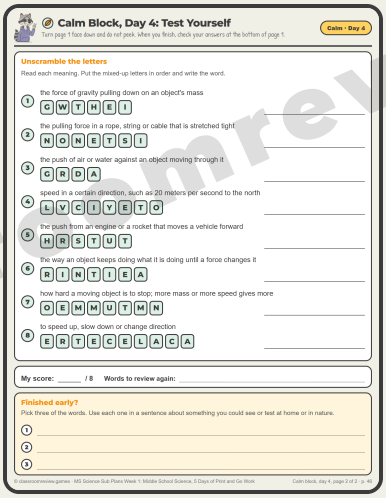
Science set: practice, Week 2 (solo)



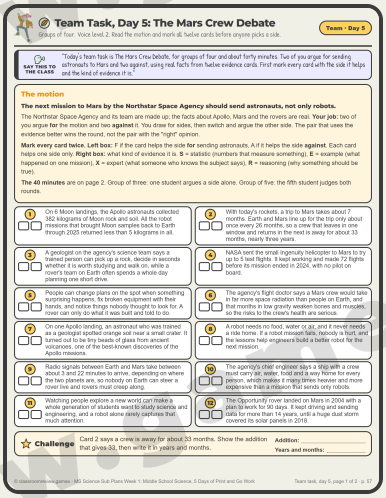
Science set: the third page (solo)



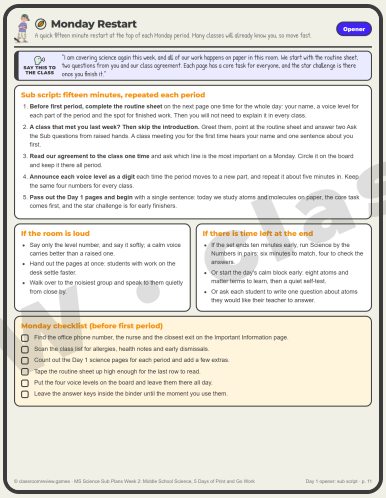
Calm block: learn 8 terms (solo)



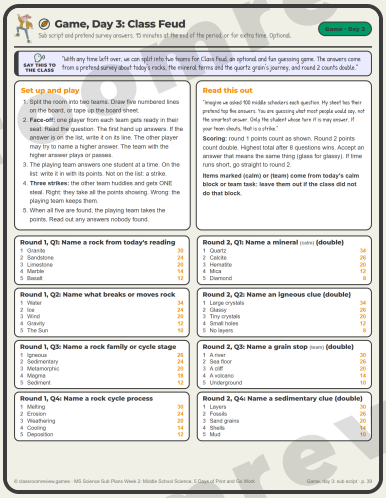
Calm block: test yourself (solo)



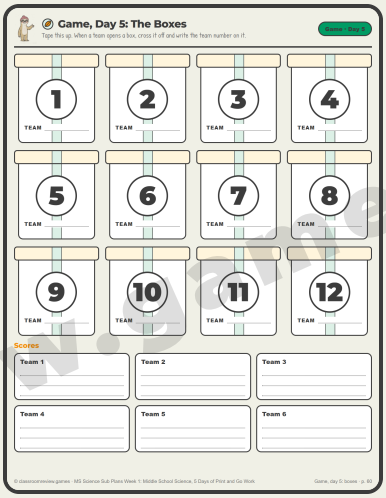
Team task (groups of four)



Monday opener (whole class)



Game: Class Feud (whole class)



Game: Mystery Box (whole class)

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Every day: a science set, a calm block, a team task and an optional game



Science Set 1: Atoms and Molecules

Read the passage, then follow the worked example. Answer the two evidence questions by circling one letter.

Science · Day 1

This set reviews: atoms and elements, reading chemical formulas, counting the atoms in a molecule, and salt as an extended structure
NGSS: MS-PS1-1 (atoms and molecules)

SAY THIS TO THE CLASS "Today we look at atoms, the tiny pieces everything is made of, and how they join into molecules. Work on your own, starting with the reading and the worked example on page 1. Do the core task on each page first, then the star challenge when you finish."

Everything around you, from the air you breathe to the desk under your paper, is made of atoms. An atom is the smallest piece of an element that is still that element. Scientists know of 118 elements, and each one has its own kind of atom. Gold is made only of gold atoms, and pure oxygen is made only of oxygen atoms. Each element has a symbol of one or two letters, such as H for hydrogen, O for oxygen, C for carbon, N for nitrogen and Na for sodium.

Atoms can join together. A molecule is a group of two or more atoms held together by chemical bonds. A chemical formula is a model that tells which atoms are in a molecule and how many of each. In H_2O, the formula for water, the small 2 after the H is called a subscript: it means two hydrogen atoms. The O has no subscript, which means one oxygen atom, so every water molecule has three atoms in all. The oxygen gas in the air is made of O_2 molecules: two oxygen atoms bonded together. A substance made of two or more different elements bonded together, like water, is called a compound.

Not every substance is made of separate molecules. In table salt, sodium and chlorine are joined in a huge repeating pattern called a crystal, with one sodium for every chlorine all the way through. The formula NaCl shows that ratio, not one small molecule. The pattern is built from cube-shaped units, which is why grains of table salt are shaped like tiny cubes. Diamond is an extended structure too: every carbon atom is bonded to four other carbon atoms, in one network that runs through the whole stone.

Atoms are far too small to see, even with a school microscope, so scientists use models to show them: letters in a formula, circles and sticks in a drawing, or balls in a model kit. Every model leaves something out, but a good one shows which atoms are present and how they are connected.

Worked example

Glucose, a sugar your cells use for energy, has the formula $C_6H_{12}O_6$.

6 carbon + 12 hydrogen + 6 oxygen = 24 atoms, from 3 elements, so it is a compound.

Try it

Propane, a fuel for camp stoves and grills, has the formula C_3H_8.

Atoms in one molecule: _____

Number of elements: _____

Evidence from the reading

1. **Which sentence from the reading best supports the claim that table salt is not made of separate molecules?**
   - (A) "Atoms can join together"
   - (B) "The formula NaCl shows that ratio, not one small molecule"
   - (C) "Each element has a symbol of one or two letters"
   - (D) "Every model leaves something out"
2. **Which sentence from the reading best explains why scientists need models to study atoms?**
   - (A) "Scientists know of 118 elements, and each one has its own kind of atom"
   - (B) "Gold is made only of gold atoms, and pure oxygen is made only of oxygen atoms"
   - (C) "Atoms are far too small to see, even with a school microscope"
   - (D) "Diamond is an extended structure too"

Challenge A model kit has 13 hydrogen balls and 8 oxygen balls. How many complete water molecules can you build? Which kind of ball runs out first?

Molecules: .....

Runs out: .....

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Science Set 1: The Molecule Table

Use each formula to fill in the last three columns. A small number after a symbol counts that atom; no number means one.

Science · Day 1

SUBSTANCE	FORMULA	ATOMS IN ONE MOLECULE	NUMBER OF ELEMENTS	ELEMENT OR COMPOUND?
Oxygen gas	O_2			
Water	H_2O			
Carbon dioxide gas	CO_2			
Ozone	O_3			
Methane	CH_4			
Acetylene (a welding gas)	C_2H_2			
Nitrogen gas	N_2			
Sucrose (table sugar)	$C_{12}H_{22}O_{11}$			

Questions

1. **Which substances in the table are elements, not compounds? How do you know from the formula?**

2. **Which molecule in the table has the most atoms? How many?**

3. **Oxygen gas and ozone are both made only of oxygen atoms. How are their molecules different?**

4. **How many hydrogen atoms are in 3 molecules of methane?**

5. **Sucrose and glucose (the worked example) are both made of carbon, hydrogen and oxygen. How many more atoms does one sucrose molecule have than one glucose molecule?**

6. **Which molecule in the table has exactly four atoms? Name its two elements.**

Challenge Ethane is a fuel gas whose molecule has 2 carbon atoms and 6 hydrogen atoms. Write its formula. How many atoms are in one molecule?

Formula: .....

Atoms: .....

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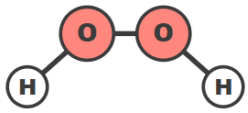
Science Set 1: Reading Models

Each drawing is a ball-and-stick model: a circle is an atom, a line is a bond. Count the atoms and write the formula.

Science · Day 1

Four models

A



Formula: _____

Atoms: _____

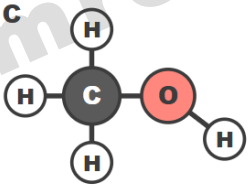
B



Formula: _____

Atoms: _____

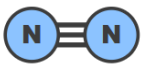
C



Formula: _____

Atoms: _____

D



Formula: _____

Atoms: _____

Write carbon first, then hydrogen, then the other symbols. Which model shows a molecule of an element, not a compound?

_____

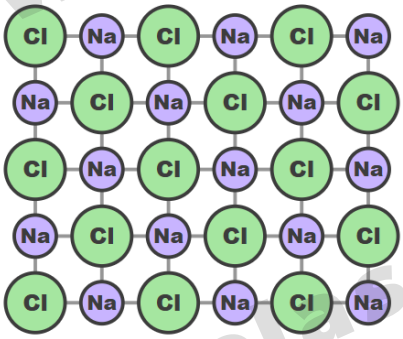
Draw it yourself

Draw a ball-and-stick model of each molecule from the table on page 2. Write the symbol in every circle and draw one line for each bond.

Water, H_2O

Methane, CH_4

A slice of a salt crystal



Small circles: sodium (Na). Big circles: chlorine (Cl).

1. **Count the sodium and the chlorine in this slice.**
   Sodium: _____
   Chlorine: _____
2. **What is the ratio of sodium to chlorine? Which formula fits it?**
   _____
3. **The pattern keeps going in every direction. Why can we not point to one molecule of salt?**
   _____
   _____

☆ Challenge Another crystal

In the mineral fluorite, calcium (Ca) and fluorine (F) form a crystal with 2 fluorine for every calcium. A slice holds 14 calcium. How many fluorine does it hold? Write the formula for fluorite.

Fluorine: _____

Formula: _____

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Answer Keys (1 of 8)

Day 1. Teacher copy. Keep these pages out of the student sets.

Day 1 opener: Science by the Numbers, answers

1. B (6); **2. C** (8); **3. A** (4); **4. F** (71); **5. J** (365); **6. E** (32); **7. H** (150); **8. I** (343).

Never used: D (12) and G (100). One point for each right letter, 8 points at most. Where the number came from: answers vary; accept any sensible way of measuring or counting it (for example, counting the legs on many insects, or timing Earth's trip around the Sun).

Science Set 1: Atoms and Molecules

Try it: C_3H_8: 3 C + 8 H = 11 atoms; 2 elements. **Evidence:** 1. B ("The formula NaCl shows that ratio, not one small molecule"); 2. C ("Atoms are far too small to see, even with a school microscope"). **Page 1 star challenge:** 6 water molecules (6 x 2 = 12 hydrogen, 6 oxygen); hydrogen runs out first (1 hydrogen and 2 oxygen left over).

Table: Oxygen gas 2 atoms, 1 element, element; Water 3 atoms, 2 elements, compound; Carbon dioxide gas 3 atoms, 2 elements, compound; Ozone 3 atoms, 1 element, element; Methane 5 atoms, 2 elements, compound; Acetylene (a welding gas) 4 atoms, 2 elements, compound; Nitrogen gas 2 atoms, 1 element, element; Sucrose (table sugar) 45 atoms, 3 elements, compound.

Questions: 1. Oxygen gas, Ozone and Nitrogen gas: each formula has only one symbol (one kind of atom); 2. Sucrose, 45 atoms (12 C + 22 H + 11 O); 3. An oxygen gas molecule has 2 oxygen atoms; an ozone molecule has 3; 4. 3 x 4 = 12; 5. 45 - 24 = 21 more atoms; 6. Acetylene: carbon and hydrogen (2 C + 2 H). **Page 2 star challenge:** C_2H_6; 8 atoms.

Models: A H_2O_2, 4 atoms; B CO_2, 3 atoms; C CH_4O, 6 atoms (also accept CH_3OH); D N_2, 2 atoms. Molecule of an element: D (nitrogen gas). **Draw it yourself:** water: an O circle in the middle with one line to each of two H circles; methane: a C circle in the middle with one line to each of four H circles. Accept any layout with the right atoms and bonds. **Salt slice:** 15 sodium, 15 chlorine; 1 to 1, NaCl; the same pattern repeats through the whole grain, so there is no small separate group to call one molecule. **Page 3 star challenge:** 14 x 2 = 28 fluorine; CaF_2.

Calm block, Day 1: Learn and Test: Atoms and Matter Terms

Match: 1. isotope; 2. electron; 3. alloy; 4. neutron; 5. proton; 6. lattice; 7. polymer; 8. ion.

Students check their own test with the upside-down answers at the bottom of page 1 and write a score out of 8. Finished early sentences: answers vary; accept any sentence about something students could see or test at home or in nature that uses the word with its page 1 meaning.

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Calm Block, Day 1: Learn 8 Words

Work alone and quietly. Learn 8 matter property terms, then test yourself on page 2.

Calm · Day 1

SAY THIS TO THE CLASS

"The calm block is silent work on matter property terms, each of you on your own. Learn the eight matter property terms on page 1, then turn it over and match each term to its meaning on page 2. Then turn page 1 upside down and mark your answers against the key strip."

How to learn them

1. Read the word and its meaning.
2. Read the example sentence.
3. Cover the word. Say it from the meaning.
4. Write it once on the line.

Know all eight? Turn this page face down and take the test on page 2.

	WORD	MEANING AND EXAMPLE	WRITE IT
1	**buoyancy** NOUN	the upward push a liquid or gas gives an object in it *A life jacket adds **buoyancy** to keep a swimmer up.*	
2	**displacement** NOUN	the water an object pushes aside when it goes under *The rock's **displacement** in a measuring cup was 24 cm³.*	
3	**matter** NOUN	anything that has mass and takes up space *Air is **matter** too: a balloon full of it has mass.*	
4	**viscosity** NOUN	how thick a liquid is, or how slowly it pours *Honey's high **viscosity** makes it pour slowly.*	
5	**solubility** NOUN	how much of a substance can dissolve in a liquid *Sugar has a higher **solubility** in hot tea than in iced tea.*	
6	**conductor** NOUN	a material that lets heat or electricity pass easily *A metal spoon is a good **conductor** of heat.*	
7	**malleable** ADJECTIVE	able to be hammered into thin sheets without breaking *Gold is so **malleable** it can be beaten thinner than paper.*	
8	**hydrometer** NOUN	a floating tool that measures how dense a liquid is *A **hydrometer** floats higher in salt water.*	

Check your test here (only after the test) Turn the page upside down to read.

1 displacement 2 hydrometer 3 viscosity 4 conductor 5 malleable 6 matter 7 buoyancy 8 solubility

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Team Task, Day 2: The Lab Week Plan

Groups of four. Voice level 2. Read the rules together, name the branch of every investigation, then test plans on page 2.

Team · Day 2

SAY THIS TO THE CLASS "Today's team task is The Lab Week Plan, for groups of four and about forty minutes. Your group plans a science club week with the most member votes, inside a money limit and a time limit. Start by agreeing on the branch of science of every investigation on page 1."

The job

You run the science club's lab week. Members voted on ten investigations they want to try. The club has only **$40** for supplies and **6 lab periods** in the week. Choose the investigations with the **most member votes in total** while following every rule.

Time plan (40 minutes): read the rules and name every branch 10 min; test at least three plans 18 min; final plan and the checks 7 min; fair test check 5 min.

Rules

1. All supplies together: **$40 or less**.
2. All lab periods together: **6 or fewer**.
3. At least **one investigation from each branch** of science: life, Earth and space, and physical.
4. An investigation goes in whole or not at all, and only once.
5. To test a plan, add up its supplies, periods and votes, then check all three branches are in it.

Step 1: name the branch

- **L = Life:** living things (plants, animals and tiny living things) and how they live and grow.
- **E = Earth and Space:** rocks, soil, water, weather, the shape of the land, and Earth in space.
- **P = Physical:** matter and its properties, motion and forces, and energy such as heat, light, electricity and magnetism.

Ask: what is actually being studied? Write L, E or P in the Branch column.

INVESTIGATION	THE QUESTION IT TESTS	BRANCH	SUPPLIES	PERIODS	VOTES
Bean Sprouts	Do bean seeds sprout faster in the light or in the dark?		$6	2	6
Ramp Race	Does a toy car roll farther after coming down a higher ramp?		$10	1	5
Soil Soak	Which soil holds the most water: sand, clay or garden soil?		$14	1	4
Yeast Balloons	Does yeast give off more gas in warm water or in cold water?		$16	1	7
Electromagnets	Does an electromagnet pick up more paper clips when the wire has more coils?		$16	2	9
Model Glacier	How does a block of ice with sand frozen into it scrape a tray of clay as it slides?		$6	2	7
Cup Wraps	Which wrap keeps a cup of hot water warm longest: foil, wool or newspaper?		$14	1	5
Pill Bug Choice	Do pill bugs move toward damp soil or dry soil?		$6	2	8
Lamp and Globe	Why are summer days warmer than winter days? A lamp and a tilted globe model it.		$10	1	6
Towel Test	Which brand of paper towel soaks up the most water?		$16	1	4

Challenge Which investigation gives the most votes for each dollar of supplies? Show the division.

Investigation: .....

Votes per dollar: .....

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Game, Day 1: The Board

Tape this to the whiteboard or copy it. Cross squares off as they are played.

Game · Day 1

ATOMS	FORMULAS	CRYSTALS	PARTICLES	MYSTERIES
100	100	100	100	100
200	200	200	200	200
300	300	300	300	300
400	400	400	400	400
500	500	500	500	500

Scores

Team 1	**Team 2**	**Team 3**
Team 4	**Team 5**	**Team 6**

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Game, Day 2: Paper Password

Sub script and science word list. 15 minutes at the end of the period, or for extra time. Optional.

Game · Day 2

SAY THIS TO THE CLASS

"Password is an optional, fun game for pairs if a few minutes are left at the end. One partner gives one-word clues for a secret word from today's states of matter work, the new terms and the science club planning task. The other partner guesses."

Set up (2 minutes)

1. Before class, copy the card page one-sided and fold and tear it into four round cards. Hand each pair only the current round's card; pairs keep each used card and add the four round totals at the end.
2. Partner A is the clue giver in rounds 1 and 3, Partner B in rounds 2 and 4. The guesser never sees the card.
3. Rounds last 2 minutes, with 30 seconds between them to swap roles. One-word clue, then ONE guess; wrong means another clue.
4. After five clues without a right guess, the word scores 0. Say "Go" and "Stop" for each round.

Read this out

"Your clue is one word only. You may not say the secret word or any part of it. If the word is snowman, you cannot say snow or man. No gestures, no spelling, no rhymes. Break a rule and that word scores zero."

Scoring: guessed on clue 1 = 5 points, clue 2 = 4, clue 3 = 3, clue 4 = 2, clue 5 = 1. The clue giver circles the number on the card. After round 4, pairs add their round totals. Highest total wins.

Words marked (calm) or (team), here and on the cards, come from today's calm block or team task. If the class skipped that block, pairs leave them out (and any round left empty).

Referee calls

Two words glued together ("hotdog") count as one clue only if they make a real word. No plurals or "-ing" forms of the secret word. If a pair disagrees about a clue, the word scores zero. Each example clue below is allowed, and a good first clue.

Timing (15 minutes)

0:00	2:00	4:30	7:00	9:30	12:00
Set up, rules	Round 1, Partner A	Round 2, Partner B	Round 3, Partner A	Round 4, Partner B	Add totals, winners

Round 1: Partner A gives clues

SOLID	example clue: ice
LIQUID	example clue: pour
GAS	example clue: air
PARTICLE	example clue: tiny
MELTING	example clue: thaw

Round 2: Partner B gives clues

BOILING	example clue: bubbles
FREEZING	example clue: cold
CONDENSE	example clue: droplets
MERCURY	example clue: thermometer
STEAM	example clue: kettle

Round 3: Partner A gives clues

PLASMA (calm)	example clue: lightning
PRESSURE (calm)	example clue: tire
KINETIC (calm)	example clue: motion
EXPAND (calm)	example clue: grow
THERMAL (calm)	example clue: heat

Round 4: Partner B gives clues

SUPPLIES (team)	example clue: materials
BRANCH (team)	example clue: category
YEAST (team)	example clue: bread
MAGNET (team)	example clue: attract
ETHANOL	example clue: alcohol

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Game, Day 4: Classroom Millionaire

Sub script and the 12 questions. 15 minutes at the end of the period, or for extra time. Optional.

Game · Day 4

SAY THIS TO THE CLASS "Classroom Millionaire is an optional, fun way to finish, and the whole class climbs one ladder of twelve questions together. The questions come from today's energy reading, the energy terms and the Energy Olympics, and we share three lifelines."

How it works

1. Tape up the ladder sheet. The whole class is one player. Pick a student for the hot seat (a new student for every question).
2. Read the question and the four options, then read the options again. The hot seat may listen to quiet advice, then says "final answer" and a letter.
3. Right: the class climbs one rung. Before hearing the next question, the class may vote to walk away and keep what it has.
4. Wrong: the climb ends. Rungs 4 and 8 are safe: the class keeps the last safe amount it passed.
5. Time left over? Play the questions again as a team quiz.

Three lifelines (one use each)

Ask the class: everyone shows 1, 2, 3 or 4 fingers at once for A, B, C or D. The hot seat looks, then decides.

50/50: read out the two wrong options listed under the question. Cross them off.

Phone a friend: the hot seat picks one classmate, who has 30 seconds to say what they think out loud.

"Only the hot seat's final answer counts. Shout an answer and the class loses a lifeline."

Items marked (calm) or (team) come from today's calm block or team task: leave them out if the class did not do that block.

Rungs 1 to 4, rung 4 is safe

1. $100 Same speed: which ball has more energy?
A. 7 kg B. 2 kg C. Same D. Neither
Answer: A. 7 kg (50/50 removes C and D)

2. $250 Energy is measured in what unit?
A. Meters B. Newtons C. Joules D. Kilograms
Answer: C. Joules (50/50 removes A and D)

3. $500 A weight that swings on a string? (calm)
A. Pendulum B. Magnet C. Spring D. Lever
Answer: A. Pendulum (50/50 removes C and D)

4. $1,000 Energy stored by position is called what?
A. Kinetic B. Potential C. Sound D. Light
Answer: B. Potential (50/50 removes C and D)

Rungs 5 to 8, rung 8 is safe

5. $2,500 A 2 kg ball at 3 m/s: kinetic energy in J?
A. 3 B. 6 C. 9 D. 18
Answer: C. 9 (50/50 removes A and D)

6. $5,000 Which card won the Energy Olympics? (team)
A. Elephant B. Sprinter C. Car D. Horse
Answer: B. Sprinter (50/50 removes A and D)

7. $10,000 Double the speed: kinetic energy becomes?
A. Half B. The same C. Twice as big D. Four times
Answer: D. Four times (50/50 removes A and B)

8. $25,000 One joule of energy each second is one what? (calm)
A. Watt B. Newton C. Meter D. Gram
Answer: A. Watt (50/50 removes C and D)

Rungs 9 to 12

9. $50,000 The skater at the lowest point has the most?
A. Height B. Speed C. Stored energy D. Mass
Answer: B. Speed (50/50 removes A and D)

10. $100,000 50 kg skater at 4 m: stored energy in J?
A. 200 B. 490 C. 1,960 D. 2,450
Answer: C. 1,960 (50/50 removes A and D)

11. $500,000 Repelling magnets store the most energy when?
A. Far apart B. Pushed close C. Upside down D. Spinning
Answer: B. Pushed close (50/50 removes C and D)

12. $1 MILLION 0.06 kg ball at 50 m/s: energy in J? (team)
A. 3 B. 75 C. 150 D. 1,500
Answer: B. 75 (50/50 removes A and D)

If the class misses

Wrong on rung 1 to 4	**class keeps $0**
Wrong on rung 5 to 8	**class keeps $1,000**
Wrong on rung 9 to 12	**class keeps $25,000**
Walk away after rung n	**class keeps rung n**

Ew. classroomreview.gam



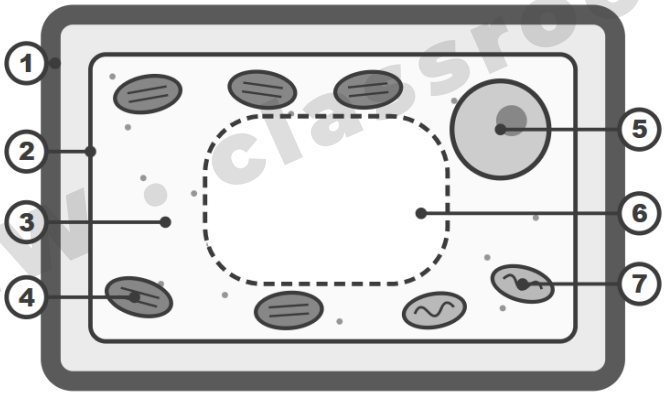
Science Set 2: Inside Two Cells

Label each part from the word bank. Then match each job to the part that does it.

Science · Day 2

Word bank: cell wall, chloroplast, cytoplasm, membrane, mitochondrion, nucleus, vacuole

A plant cell



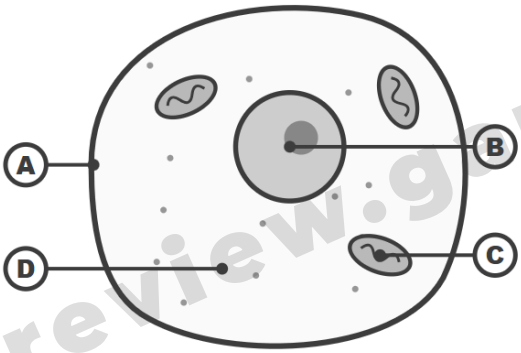
1 _____ 2 _____

3 _____ 4 _____

5 _____ 6 _____

7 _____

An animal cell



A _____ B _____

C _____ D _____

Which parts in the bank does the animal cell not have?

.....

Who does this job?

THE JOB	THE PART
Capture the energy of sunlight to make food	
Controls what goes in and out	
Stores water	
Holds DNA, the instructions that control the cell's activities	
Break down food to release the energy the cell needs	
Supports the cell and gives the plant its shape	

☆ Challenge Heart cells

The muscle cells of the heart have far more mitochondria than most other cells. Use the reading to explain why a heart muscle cell would need so many.

.....

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Two weeks of middle school science, planned and ready to print.

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10 days, each with a science set, a calm block, a team task and an optional game

42 "say this" scripts: one for every task, read out by the sub

20 + 10 solo blocks (science sets and calm blocks) + team tasks for groups of four

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- Your sub tub: print it once and keep it all year.
- Any sub: a script to read out for every task and every answer in the key, so no science background is needed.

Thank you! If this works for your class, a quick review helps other teachers find it and gives you TpT credits.



Classroom REVIEW GAMES