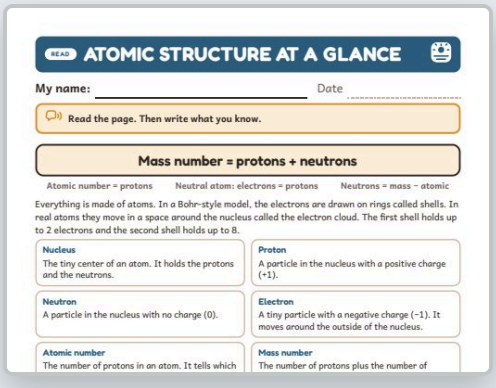
6TH–8TH GRADE · PHYSICAL SCIENCE

BOHR MODELS

ATOMIC STRUCTURE WORKSHEETS

Label an atom, fill in the paragraph, fill in the particle chart, draw Bohr-style models of the first ten elements, calculate neutrons and sort protons, neutrons and electrons. Answer keys, a tracker and a family page. Print, or type your answers. PDF.


READ ATOMIC STRUCTURE AT A GLANCE

My name: _____ Date _____

Read the page. Then write what you know.

Mass number = protons + neutrons

Atomic number = protons Neutral atom: electrons = protons Neutrons = mass − atomic

Everything is made of atoms. In a Bohr-style model, the electrons are drawn on rings called shells. In real atoms they move in a space around the nucleus called the electron cloud. The first shell holds up to 2 electrons and the second shell holds up to 8.

Nucleus The tiny center of an atom. It holds the protons and the neutrons.

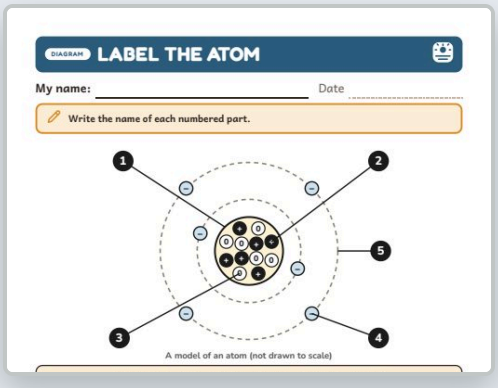
Proton A particle in the nucleus with a positive charge (+1).

Neutron A particle in the nucleus with no charge (0).

Electron A tiny particle with a negative charge (−1). It moves around the outside of the nucleus.

Atomic number The number of protons in an atom. It tells which

Mass number The number of protons plus the number of

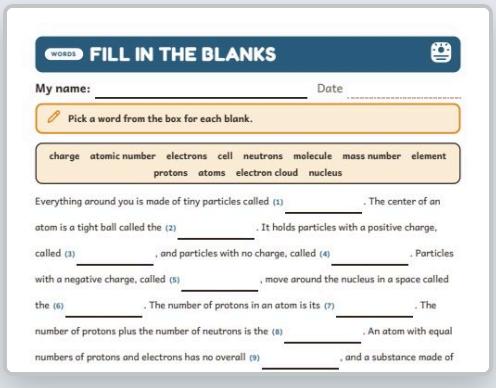

DIAGRAM LABEL THE ATOM

My name: _____ Date _____

Write the name of each numbered part.

1 2 3 4 5

A model of an atom (not drawn to scale)

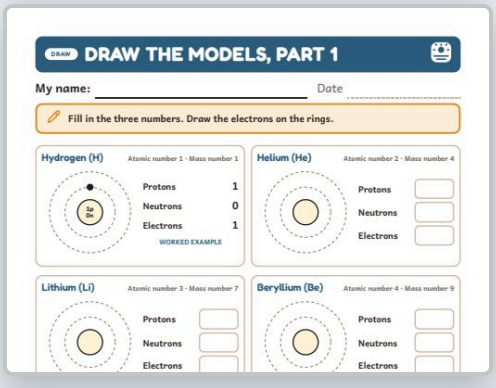

WORDS FILL IN THE BLANKS

My name: _____ Date _____

Pick a word from the box for each blank.

charge atomic number electrons cell neutrons molecule mass number element protons atoms electron cloud nucleus

Everything around you is made of tiny particles called (1) _____. The center of an atom is a tight ball called the (2) _____. It holds particles with a positive charge, called (3) _____, and particles with no charge, called (4) _____. Particles with a negative charge, called (5) _____, move around the nucleus in a space called the (6) _____. The number of protons in an atom is its (7) _____. The number of protons plus the number of neutrons is the (8) _____. An atom with equal numbers of protons and electrons has no overall (9) _____, and a substance made of


DRAW DRAW THE MODELS, PART 1

My name: _____ Date _____

Fill in the three numbers. Draw the electrons on the rings.

Hydrogen (H) Atomic number 1 · Mass number 1

Protons 1
Neutrons 0
Electrons 1

WORKED EXAMPLE

Helium (He) Atomic number 2 · Mass number 4

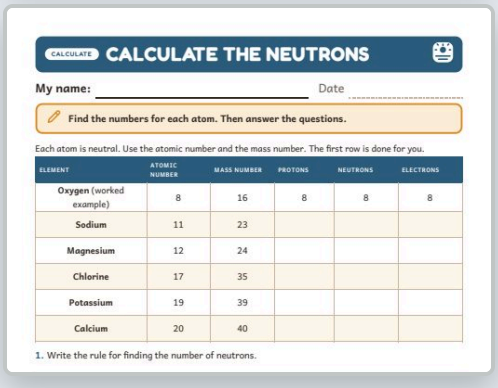
Protons
Neutrons
Electrons

Lithium (Li) Atomic number 3 · Mass number 7

Protons
Neutrons
Electrons

Beryllium (Be) Atomic number 4 · Mass number 9

Protons
Neutrons
Electrons


CALCULATE CALCULATE THE NEUTRONS

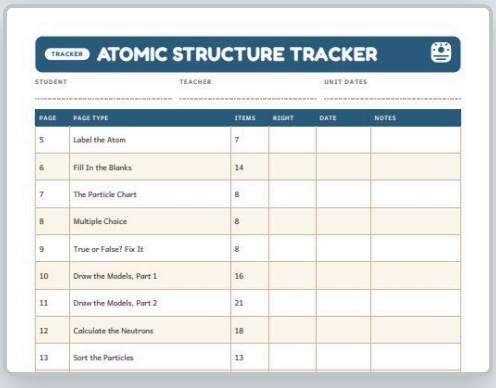
My name: _____ Date _____

Find the numbers for each atom. Then answer the questions.

Each atom is neutral. Use the atomic number and the mass number. The first row is done for you.

ELEMENT	ATOMIC NUMBER	MASS NUMBER	PROTONS	NEUTRONS	ELECTRONS
Oxygen (worked example)	8	16	8	8	8
Sodium	11	23			
Magnesium	12	24			
Chlorine	17	35			
Potassium	19	39			
Calcium	20	40			

1. Write the rule for finding the number of neutrons.


TRACKER ATOMIC STRUCTURE TRACKER

STUDENT TEACHER UNIT DATES

PAGE	PAGE TYPE	ITEMS	RIGHT	DATE	NOTES
5	Label the Atom	7			
6	Fill In the Blanks	14			
7	The Particle Chart	8			
8	Multiple Choice	8			
9	True or False? Fix It	8			
10	Draw the Models, Part 1	16			
11	Draw the Models, Part 2	21			
12	Calculate the Neutrons	18			
13	Sort the Particles	13			

26 Pages | **12 Page Types** | **121 Items** | **2 Answer Keys**

BRIGHT PATH SPED

START HERE

QUICK START

One complete kit for an atomic structure unit in grades 6-8. Students read a reference page, label an atom, fill in a paragraph, complete a particle chart, draw Bohr-style models of the first ten elements, calculate neutrons, sort the particles and write short answers — on pages with room to work.

THREE STEPS

1. **Teach or review with the reference page**
   Page 4 has the three formulas, the six key words and a place for the student to write what they know. Read it together or hand it out as the first page.

2. **Hand over a page**
   Every student page opens with a name line and one short instruction. Nothing on it is written for you, so the student can start. Short answers have three or more lines and the explanations have five or six, so the page is the whole workspace.

3. **Check it, record it, send it home**
   The answer keys are pages 16 and 17. Record each page on the tracker (page 18), roll a group up on page 19, and send the family page (21). A filled example is on page 22.

WHICH PAGE, WHEN

WHEN…	USE…
Introducing or reviewing the unit	At a Glance, page 4 · Label the Atom, page 5
Checking the vocabulary	Fill In the Blanks, page 6 · The Particle Chart, page 7
Quick check or exit slip	Multiple Choice, page 8 · True or False? Fix It, page 9
Drawing Bohr-style models	Draw the Models, pages 10 and 11
Practicing the arithmetic	Calculate the Neutrons, page 12
Hands-on sorting	Cut and Paste, page 13
Writing about science	Short Answers, page 14 · Explain It, page 15

Everything inside (26 pages)

- **12 student pages** in 12 page types: a reference page, a diagram of an atom to label, fill in, a particle chart, multiple choice, true or false, ten Bohr-style models to draw, a calculate-the-neutrons table, cut and paste and two short-answer pages
- **121 scored items** on 11 pages
- **12 cut-and-paste pieces** on one sort mat
- **2 answer keys, 1 tracker, 1 class grid**, 1 team note, 1 family page, 1 filled example, 1 phrase bank, 1 binder cover and 6 divider tabs

Print or type

Every page prints clean in black and white. The name line, answer boxes, blanks and writing lines are type-in fields in any PDF reader: click one, type, then save. This is a fillable PDF, not a slideshow or a word-processor file. The electron drawings and the cut-and-paste sort are for pencil and scissors.

READ ATOMIC STRUCTURE AT A GLANCE

My name: _____ Date .....

Read the page. Then write what you know.

Mass number = protons + neutrons

Atomic number = protons **Neutral atom: electrons = protons** **Neutrons = mass − atomic**

Everything is made of atoms. In a Bohr-style model, the electrons are drawn on rings called shells. In real atoms they move in a space around the nucleus called the electron cloud. The first shell holds up to 2 electrons and the second shell holds up to 8.

Nucleus
The tiny center of an atom. It holds the protons and the neutrons.

Proton
A particle in the nucleus with a positive charge (+1).

Neutron
A particle in the nucleus with no charge (0).

Electron
A tiny particle with a negative charge (−1). It moves around the outside of the nucleus.

Atomic number
The number of protons in an atom. It tells which element the atom is.

Mass number
The number of protons plus the number of neutrons in an atom.

Your turn. Write what you know.

An atom is

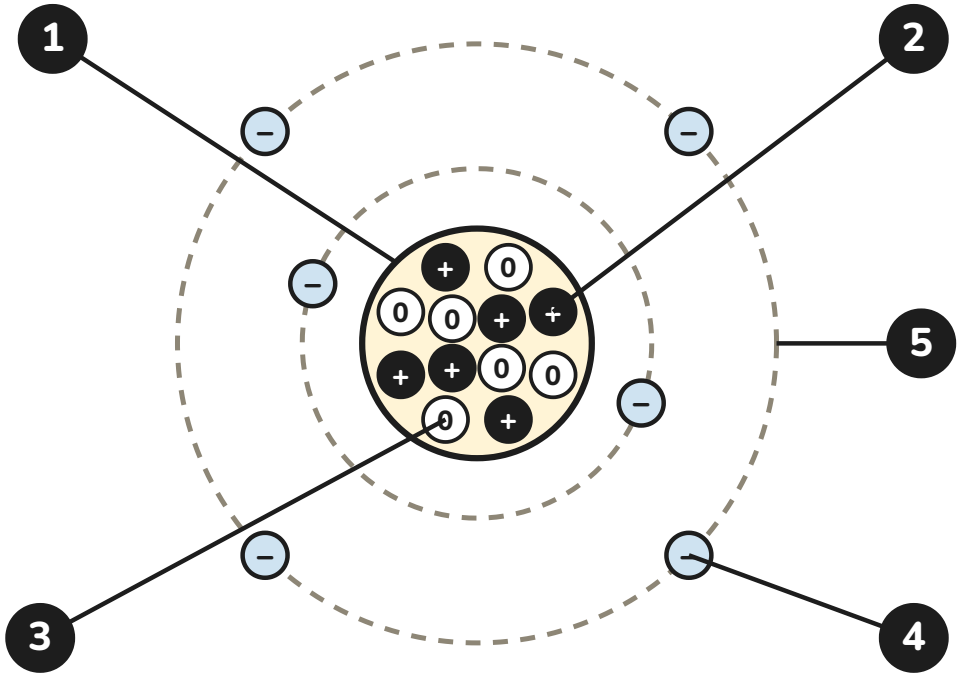
One question I still have about atoms

DIAGRAM

LABEL THE ATOM

My name: _____ Date .....

Write the name of each numbered part.



A model of an atom (not drawn to scale)

proton **cell** **shell** **nucleus** **electron** **molecule** **neutron**

1. _____ **2.** _____ **3.** _____

4. _____ **5.** _____

A. Which numbered particle has a positive charge?

_____

B. How is the nucleus different from the electron cloud, the space where the electrons move?

WORDS FILL IN THE BLANKS

My name: _____ Date .....

Pick a word from the box for each blank.

charge **atomic number** **electrons** **cell** **neutrons** **molecule** **mass number** **element** **protons** **atoms** **electron cloud** **nucleus**

Everything around you is made of tiny particles called (1) _____. The center of an atom is a tight ball called the (2) _____. It holds particles with a positive charge, called (3) _____, and particles with no charge, called (4) _____. Particles with a negative charge, called (5) _____, move around the nucleus in a space called the (6) _____. The number of protons in an atom is its (7) _____. The number of protons plus the number of neutrons is the (8) _____. An atom with equal numbers of protons and electrons has no overall (9) _____, and a substance made of only one kind of atom is an (10) _____.

Write the charge of each particle: +1, 0 or –1.

Proton ☐ **Neutron** ☐ **Electron** ☐

A. Choose one word from the box that you did not use. Write what it means.

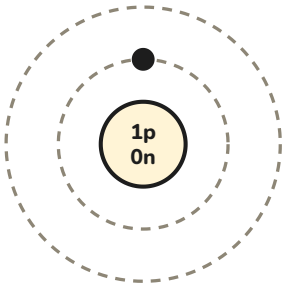
DRAW DRAW THE MODELS, PART 1

My name: _____ Date .....

Fill in the three numbers. Draw the electrons on the rings.

Hydrogen (H)

Atomic number 1 · Mass number 1

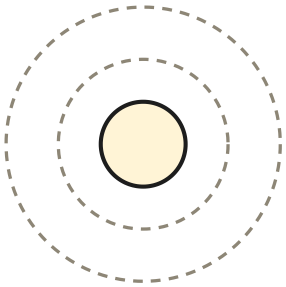


Protons	1
Neutrons	0
Electrons	1

WORKED EXAMPLE

Helium (He)

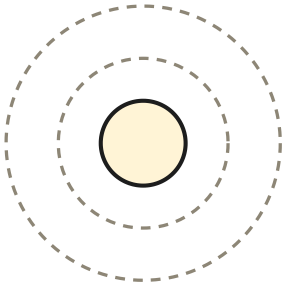
Atomic number 2 · Mass number 4



Protons	
Neutrons	
Electrons	

Lithium (Li)

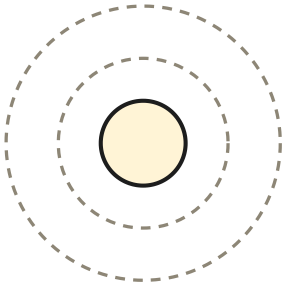
Atomic number 3 · Mass number 7



Protons	
Neutrons	
Electrons	

Beryllium (Be)

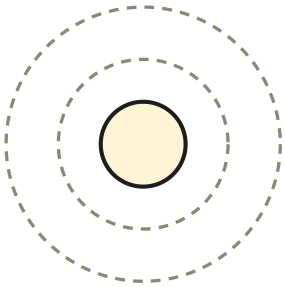
Atomic number 4 · Mass number 9



Protons	
Neutrons	
Electrons	

Boron (B)

Atomic number 5 · Mass number 11



Protons	
Neutrons	
Electrons	

Rules to use

Shell 1 holds up to 2 electrons. Shell 2 holds up to 8. Fill shell 1 first.

A neutral atom has as many electrons as protons.

Neutrons = mass number − atomic number.

Mass numbers are for the most common form of each atom, rounded from a periodic table.

SORT THE PARTICLES

My name: _____ Date .....

Cut out the pieces. Paste each one under the right particle.

Proton	Neutron	Electron

Cut on the dashed lines.

Positive particle in the nucleus	Charge of −1	Mass number − atomic number	In a neutral atom, equals the protons	Does not change the charge of the atom	Fills shells: 2, then up to 8
Sets which element an atom is	Its number is the atomic number	Charge of 0	Charge of +1	Neutral particle in the nucleus	Moves around the outside of the nucleus

1. Choose one particle. Write two facts about it.

TRACKER

ATOMIC STRUCTURE TRACKER

STUDENT _____ TEACHER _____ UNIT DATES _____

PAGE	PAGE TYPE	ITEMS	RIGHT	DATE	NOTES
5	Label the Atom	7			
6	Fill In the Blanks	14			
7	The Particle Chart	8			
8	Multiple Choice	8			
9	True or False? Fix It	8			
10	Draw the Models, Part 1	16			
11	Draw the Models, Part 2	21			
12	Calculate the Neutrons	18			
13	Sort the Particles	13			
14	Short Answers	5			
15	Explain It	3			

How to fill this in

Write how many items the student got right and the date. A written answer counts as one item when it makes every point in the key (pages 16 and 17). A blank means not tried yet, never wrong. There are 121 items on the 11 pages above; the reference page (4) is not scored. Filled example: page 22.

STANDARD OR UNIT GOAL (YOUR OWN WORDING)

EXAMPLE RILEY'S TRACKER

Riley M. is invented; nothing on this page describes a real student. The blank tracker is on page 18.

STUDENT	TEACHER	UNIT DATES
Riley M. (an invented student)	**Ms. Reyes (invented)**	**October**

PAGE	PAGE TYPE	ITEMS	RIGHT	DATE	NOTES
5	Label the Atom	7	6	10/12	Mixed up proton and neutron
6	Fill In the Blanks	14	12	10/13	Used a spare word twice
7	The Particle Chart	8	8	10/14	–
8	Multiple Choice	8	7	10/15	Missed number 7
9	True or False? Fix It	8	8	10/16	–
10	Draw the Models, Part 1	16	14	10/19	Neutrons wrong on two
11	Draw the Models, Part 2	21	–	–	–
12	Calculate the Neutrons	18	–	–	–
13	Sort the Particles	13	–	–	–
14	Short Answers	5	–	–	–
15	Explain It	3	–	–	–

How to read it

Riley M. has done **6 of 11** scored pages and got **55 of 61** items right. **2** pages were all right and **6** items were missed across 4 pages. Every number here comes from the table above.

The family note this tracker would produce

"This month Riley finished 6 pages and got 55 of 61 items right. The next thing to practice is finding neutrons: mass number minus atomic number." — every number in it is a row of the table above.

What the table points to

4 pages carry a note and each one is short of full. Pages left blank (5 of them) are not tried yet, never wrong. Calculate the Neutrons (page 12) is among them, so it is the next step.

THANK YOU

BEFORE YOU GO

THANK YOU FOR USING THIS RESOURCE

Built for the teacher whose students each need a different amount of support reading, writing and reasoning about science. If this helped, leaving feedback on TPT helps other teachers find it.

Everything inside, one more time

- **12 student pages** in 12 page types, **121 scored items**, every answer read from the same lists that draw the pages.
- **8 multiple-choice questions**, **8 true-or-false statements**, **12 cut-and-paste pieces** and **2 answer keys**.
- **1 tracker, 1 class grid, 1 team note, 1 family page, 1 filled example, 1 phrase bank** (15 starters), **1 binder cover** and divider tabs.

No real student anywhere in this file

The filled example on page 22 names "Riley M.," an invented student used only to show how the tracker fills in. No table, note or score anywhere in this resource describes a real child, and nothing here is a clinical judgment, an eligibility timeline, or a medical claim of any kind. Once you fill in a real student's name, the tracker, class grid and team note (pages 18, 19 and 20) do carry real information — keep completed pages secure the same way you would any other record.

Something missing or wrong?

Please use the **Ask a Question** tab on the product page first — every question is read, and a fix to the file is a free update you re-download from **My Purchases**.

WHAT'S NEXT FROM THIS STORE

More grades 6-8 science for the same classroom, plus science and social studies vocabulary probes.



Periodic Table Worksheets
A grades 6-8 chemistry set: groups, symbols, sort and valence, with answer keys.



Photosynthesis Worksheets
A grades 6-8 life science set: diagram, sort, fill in and short answer.



Content Area Vocabulary: Science and Social Studies
Progress-monitoring probes for science and social studies words, grades 4-6.

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