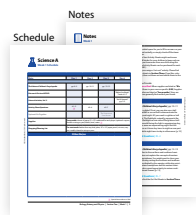


# Instructor's Guide Quick Start

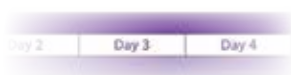
The BookShark™ Instructor's Guide (IG) is designed to make your educational experience as easy as possible. We have carefully organized the materials to help you and your children get the most out of the subjects covered. If you need help reading your schedule, see "How to Use the Schedule" in **Section Four**.

This IG includes a 36-week schedule, notes, assignments, readings, and other educational activities. For specific organizational tips, topics and skills addressed and other suggestions for the parent/teacher see **Section Three**. Here are some helpful features that you can expect from your IG.



## Easy to use

Everything you need is located right after the schedule each week. If a note appears about a concept in a book, it's easy to find it right after the schedule based on the day the relevant reading is scheduled.



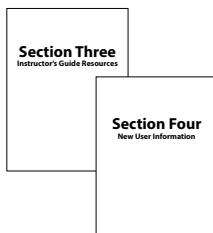
## 4-Day Schedule

Designed to save one day a week for music lessons, sports, field trips, co-ops, or other extra-curricular activities.

## Notes

When relevant, you'll find notes about specific books to help you know why we've selected a particular resource and what we hope your children will learn from reading it. Keep an eye on these notes to also provide you with insights on more difficult concepts or content (look for "Note to Mom or Dad").

**Note:** What are the two kinds of poisonous lizards? The book only lists one – the Gila monster (*Hemodermis susperum*) native to the southwestern United States. The other kind is known as a beaded lizard (*Hemodermis horridum*) and is found in Mexico and Guatemala. (p. 35)

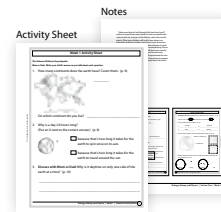


## Instructor's Guide Resources and New User Information

Don't forget to familiarize yourself with some of the great helps in **Section Three** and **Section Four** so you'll know what's there and can turn to it when needed.

## Activity Sheets and Answer Keys

Activity Sheets follow each week's notes and are customized for each lesson to emphasize important points in fun ways. They are designed with different skills and interests in mind. You may want to file them in a separate binder for your student's use. Corresponding Answer Keys have been included within your weekly Notes.



# How to Use the Schedule

## More notes with important information about specific books.

The **N** symbol provides you with a heads-up about difficult content. We tell you what to expect and often suggest how to talk about it with your kids.

## 4-Day Schedule:

This entire schedule is for a 4-Day program. Designed to save one day a week for music lessons, sports, field trips, co-ops and other activities.


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Find the Activity Sheets for students directly after the Notes. Students should complete only the questions assigned.

We schedule optional assignments to be used if desired.

Find all the supplies needed for this week as well as the supplies needed for next week here.

Additional space for writing extra assignments, activities, or notes.



## Science A

### Week 1 Schedule

Date:	Day 1	Day 2	Day 3	Day 4
<i>The Usborne Children's Encyclopedia</i>	pp. 8-9	pp. 10-11	pp. 12-13	
<i>Discover &amp; Do Level K DVD</i>				"Before You Begin" Tracks #1-3
<i>Science Activities, Vol. 2</i>				"Air All Around" pp. 2-3
<b>Activity Sheet Questions</b>	#1-2 <b>N</b>	#3-4	#5-7	
<b>Optional: Do Together</b>			The Seasons at Your House	
<b>Supplies</b>	<b>You provide:</b> sheets of paper, 8" x 10" cardboard for each player (optional: crayons, thread or string or yarn) bottle, bowl, water. <b>N</b>			
<b>Shopping/Planning List</b>	<b>For next week:</b> feather from any bird, plate, 10" x 10" paper, pencil, scissors, crayons, needle, thread or string or yarn.			
<b>Other Notes</b>				





**N** Special Note to Mom or Dad

**Biology, Botany, and Physics | Section Two | Week 1 | 1**




# Science G

## Week 1 Schedule

Date:	Day 1	Day 2	Day 3	Day 4	Day 5
<b>What's Science All About?</b>	pp. 94–101 	pp. 102–105	pp. 106–107		
<b>Activity Sheet Questions</b>	#1–3 	#4–6	#7		
<b>Optional: Do Together</b>	Listen to Your Children		Hot or Cold?		
<b>TOPS #13: Cohesion/Adhesion</b>	See the list below for supplies you will need on Day 4 			#1 Cohesion 	
<b>Supplies</b>	<b>We provide: GSK</b> — four plastic dropper bottles, 10-ml cylinder, wax paper, masking tape. <b>You provide:</b> pen, rubbing alcohol, blue food coloring, water, dish soap, corn oil, sheet of paper.				
<b>Shopping/Planning List</b>	<b>For next week:</b> penny, paper towel, calculator (optional).				
Other Notes					

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 Special Note to Mom or Dad



# Notes

Week 1

## Day 1

### **What's Science All About** | pp. 94–101

The little sidebar on the bottom of page 99 has some interesting wording: “What about all those substances on alien planets?” Instead of the words “alien planets,” the authors could have simply said, “other planets.” The word “alien” can mean all kinds of things, but is most commonly associated with speculation about alien life (i.e. little green men or space aliens). [pp. 98–99]

### **Activity Sheet Questions** | #1–3

#### Activity Sheet Questions

Activity Sheets are included after the notes and are assigned on each schedule page. Each Activity Sheet has a corresponding Answer Key page following these schedule pages.

You do not have to do every question on the Activity Sheets. Feel free to adjust and/or omit activities to meet the needs of your children. We cover the same concepts repeatedly throughout the year (and years to come!) to enable students to learn “naturally” through repetition and practice over time.

We have provided a variety of activities to interest and challenge your children. Feel free to let your children do those activities that they enjoy and simply talk through others. We have provided space for you to fill in answers as your children respond verbally, or simply check off the items that you discuss.

**Remember:** This program is designed for you to use to meet your children’s needs. It is not meant to use you!

**Suggestion:** Your Activity Sheets might work more easily in a small binder for your children to keep and use as assigned. If you have more than one child using this program, extra Activity Sheets can be purchased for each child.

#### **Optional: Do Together** | Listen to Your Children

Each week throughout Science G, we will provide ideas for fun activities to do with your children. In general, we will try to make the activities actually “active”: performing additional research on a particular topic, watching a video, playing a game, getting outside, or some other type of “hands-on” activity that seeks to apply what your children have been learning in a meaningful way.

Take our ideas for what they are—mere suggestions—and don’t feel burdened by them. If your children don’t want to do a particular activity or have a different, better idea, by all means ditch ours and go with theirs!

Put this attitude into practice today by actively listening to your children. As they embark on their studies, what interests them most? What do they want to learn more about? What do they not have an interest in? Do they have any ideas for fun activities they could do that relate to what they’re learning about?

Make a list of their thoughts and ideas. Then let them pick one to do today. In this way, you will let them know that their opinion is important. Children who feel they have an important, active role in determining what they learn about will be more engaged in their studies. Have fun and treasure these times together.

### **Supplies**

When supplies are listed as “**We provide:**” they are materials found in your Science G Supplies Kit (**B-GSK**). When supplies are listed as “**You provide:**” they are materials you can generally find around your home. For example:

- aspirin
- liquid laundry chlorine bleach
- curry powder
- rubber cement
- baking soda

#### Shipping Restrictions

Due to strict import regulations, it is illegal to ship biological matter to certain countries (including New Zealand and Australia). If you requested your science supplies to be shipped to a country with such restrictions, we have removed that kit from your order and reduced your charge accordingly.

## Day 2

### **What's Science All About** | pp. 102–105

### **Activity Sheet Questions** | #4–6

## Day 3

**What's Science All About** | pp. 106–107

**Activity Sheet Questions** | #7

**Note:** Throughout the year, you will see some Activity Sheet questions marked as **Challenge** or as **Critical Thinking**. These are questions whose answers are not necessarily in the book. While we believe the material covered in the challenge questions is worthwhile for your children to know, it may not be specifically explained in their reading assignment. As always, if you think any question is too difficult for your children, please feel free to skip.

For **Challenge** questions, you and your student will need to complete outside research to answer the question. If you choose to do your research online, please review “Tips When Using the Internet” found in **Section Four** of our guide for precautions on surfing the web.

For **Critical Thinking** questions, the answer may be inspired by information that you learned that day or may be a statement of opinion. Encourage your student to take some time to write their best answer.

**Optional: Do Together** | Hot or Cold?

Ask your children if they can tell the difference between something that is hot and something that is cold. What did they say? Of course! In reality, though, our bodies can sometimes fool us. Our senses are not always as accurate as we might think.

To convince your children of this fact, do a simple experiment with them. You'll need three large bowls, cold water, warm water, and hot water (just make sure it's not too hot). Ask your children to put one hand in the bowl of cold water and one hand in the bowl of hot water. Can they tell the difference? Sure!

But what about the bowl of warm water? Ask them to remove their hands from the bowls of cold and hot water and place them both in the bowl of warm water. Although both hands are now in the same temperature water (warm), do their hands tell them the same thing? No way! The hand that was in cold water will tell them the water is hot, while the hand that was in hot water will tell them the water is cold.

Explain that this is one example of how our senses can fool us. To get accurate temperatures, we must rely on special tools, such as thermometers. If they enjoyed this little experiment, let them try it on a friend or relative. Let them explain the phenomenon to their subject as they conduct the experiment.

## Day 4

**TOPS #13: Cohesion/Adhesion** | #1 Cohesion

**Note:** The four dropper bottles with various solutions mentioned in your *TOPS* book will be used often throughout this book, so store them for reuse. ■

## Week 1 Activity Sheets

### What's Science All About?

1. Summarize what chemists study. (p. 98) *(They study substances—what they are, what they can do, what's inside them and how they can change.)*



2. What was the biggest problem with early matches? (p. 100) *(they caught fire too easily)*

3. How is Teflon® unique as a substance? (p. 101) *(It doesn't become sticky when it gets hot.)*

4. Small, simple particles that make up an element are called what? (p. 104) *(atoms)*  
 Atoms that stick together in groups of two or more are called *(molecules)*

5. Oxygen is an element because... (pp. 104–105) *(It is a substance made from only one type of atom)*

6. Do reactions always happen when you mix substances together? Explain. (p. 105) *(No, substances can also mix without reacting or bonding together, in which case they are called a mixture rather than a chemical compound.)*

7. **Challenge!** Draw an "X" in the appropriate column to classify each substance as a mixture, element, or a compound. Feel free to use the Periodic Table of Elements on pp. 124–125 if you get stuck. (pp. 106–107)

	Mixture	Compound	Element
hydrogen			X
water		X	
table salt (sodium chloride)		X	
granola	X		
nitrogen			X
hydrogen peroxide		X	

# Week 1 Activity Sheets

## What's Science All About?

1. Summarize what chemists study. (p. 98) \_\_\_\_\_

\_\_\_\_\_

2. What was the biggest problem with early matches? (p. 100) \_\_\_\_\_

\_\_\_\_\_



3. How is Teflon® unique as a substance? (p. 101) \_\_\_\_\_

\_\_\_\_\_

4. Small, simple particles that make up an element are called what? (p. 104) \_\_\_\_\_

Atoms that stick together in groups of two or more are called \_\_\_\_\_.

5. Oxygen is an element because... (pp. 104–105) \_\_\_\_\_

\_\_\_\_\_

6. Do reactions always happen when you mix substances together? Explain. (p. 105) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. **Challenge!** Draw an "X" in the appropriate column to classify each substance as a mixture, element, or a compound.

Feel free to use the Periodic Table of Elements on pp. 124–125 if you get stuck. (pp. 106–107)

	Mixture	Compound	Element
<b>hydrogen</b>			
<b>water</b>			
<b>table salt (sodium chloride)</b>			
<b>granola</b>			
<b>nitrogen</b>			
<b>hydrogen peroxide</b>			

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# Science G

## Week 2 Schedule

Date:	Day 1	Day 2	Day 3	Day 4	Day 5
<b>What's Science All About?</b>	pp. 108–109	pp. 110–111	pp. 112–113		
<b>Activity Sheet Questions</b>	#1–4	#5	#6–10		
<b>Optional: Do Together</b>	Changing States				
<b>TOPS #13: Cohesion/ Adhesion</b>				#2 Heap O'Water	
<b>Supplies</b>	<b>We provide: GSK</b> — four plastic dropper bottles from activity #1 <b>You provide:</b> penny, paper towel, calculator (optional).				
<b>Shopping/Planning List</b>	<b>For next week:</b> scissors, jar or glass, timer or clock with second hand.				
<b>Other Notes</b>					

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 Special Note to Mom or Dad



# Notes

## Week 2

### Day 1

**What's Science All About** | pp. 108–109

**Activity Sheet Questions** | #1–4

**Optional: Do Together** | Changing States

Reinforce what your children learned about the various states of matter this week by testing them out with water. First, ask them to grab a glass of water. Let them examine it. Ask them to tell you about it. What state is it in?

Now ask them how to turn it into a solid. How would they do that? Will they need to cool it or heat it? Help them turn their glass of water into a solid by pouring it in an ice cube tray to freeze.

While you're waiting for the water to freeze, discuss how to turn it into a gas. Again, how would your children turn this liquid water into a gas? Help them pour some water into a pan to heat on the stove. How long does it take before the water reaches the appropriate temperature to turn into a gas?

Ask your children to describe the water in its gaseous form. How is it similar to the liquid form? How is it different? As soon as the water you put in the freezer has frozen, ask your children to examine it in the same way. Ask the same questions. What is their favorite form of water? Liquid to drink or swim in? Frozen to make their drinks cooler on a hot day? Why?

### Day 2

**What's Science All About** | pp. 110–111

**Activity Sheet Questions** | #5

### Day 3

**What's Science All About** | pp. 112–113

**Activity Sheet Questions** | #6–10

### Day 4

**TOPS #13: Cohesion/Adhesion** | #2 Heap O'Water ■

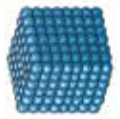
## Week 2 Activity Sheets

### What's Science All About?

1. Compare the molecules in the pictures below, then label each as either **solid**, **liquid** or **gas**. (p. 108)



(gas)



(solid)



(liquid)

2. What is the difference between the three states of matter? (p. 108)  
*(how much particles in the substance are moving around and how tightly packed together they are)*
3. How does temperature affect the three states of matter? (p. 108) \_\_\_\_\_  
*(Temperature helps determine how much energy molecules have. The more energy molecules have, the less tightly they pack together, so molecules in a liquid have more energy (and are warmer) than those in a solid, and the same comparison is true for molecules in a gas compared to a liquid.)*

4. Solve the puzzle using the terms in the box. (pp. 108–109)

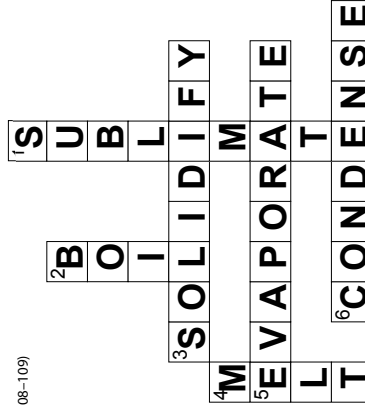
condense	boil	solidify
evaporate	melt	sublimate

#### Across

- 3) to change state from a liquid to a solid  
 5) to change state from a liquid to a gas  
 6) to change state from a gas to a liquid

#### Down

- 1) to change state directly from a gas to a solid, or from a solid to a gas  
 2) the agitated state of a liquid when it is at the temperature where it changes from a liquid to a gas  
 4) to change state from a solid to a liquid



## Week 2 Activity Sheets

5. Why does pressure affect a substance's current state? (p. 110) \_\_\_\_\_  
*(pressure can determine how free a substance's molecules are to move around, so changes in pressure can sometimes cause a change of state, even if there hasn't been a change in temperature)*



6. **Critical Thinking:** Describe some of the physical properties of pure water. (p. 112)

*(Possible: It is a liquid at room temperature; its freezing point is 0°C, and it boils at 100°C. It is clear, pours easily, has no noticeable odor...)*

7. How do chemical properties differ from physical properties? (p. 112)  
*(Physical properties primarily describe what a substance is like on its own; chemical properties describe what a substance can do. Physical properties can be found using simpler tests, but the only way to test a chemical property is to make a chemical reaction happen.)*

8. How is baking a cake an example of a chemical reaction? (p. 112)  
*(heat was applied to the mixture, and the new substance looks and feels different from the mixture and can no longer be separated into the original ingredients)*



9. Why won't tap water boil at 100°C? (p. 113) \_\_\_\_\_  
*(because it is impure—it contains small amounts of chlorine which is added to kill bacteria)*

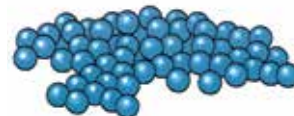
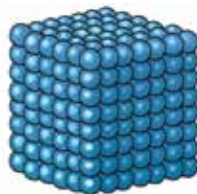
10. **Critical Thinking:** When you dissolve sugar in water at room temperature, there will come a time when the sugar stops dissolving—no matter how long you stir. At this point, we say the solution is saturated—the water has been loaded to capacity. Based on your reading, can you think of a way to get more sugar to dissolve? (p. 113)  
*(heat the water—the hotter water gets, the easier it becomes to dissolve things in it)*

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# Week 2 Activity Sheets

## What's Science All About?

1. Compare the molecules in the pictures below, then label each as either **solid**, **liquid** or **gas**. (p. 108)




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2. What is the difference between the three states of matter? (p. 108)

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3. How does temperature affect the three states of matter? (p. 108)

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4. Solve the puzzle using the terms in the box. (pp. 108–109)

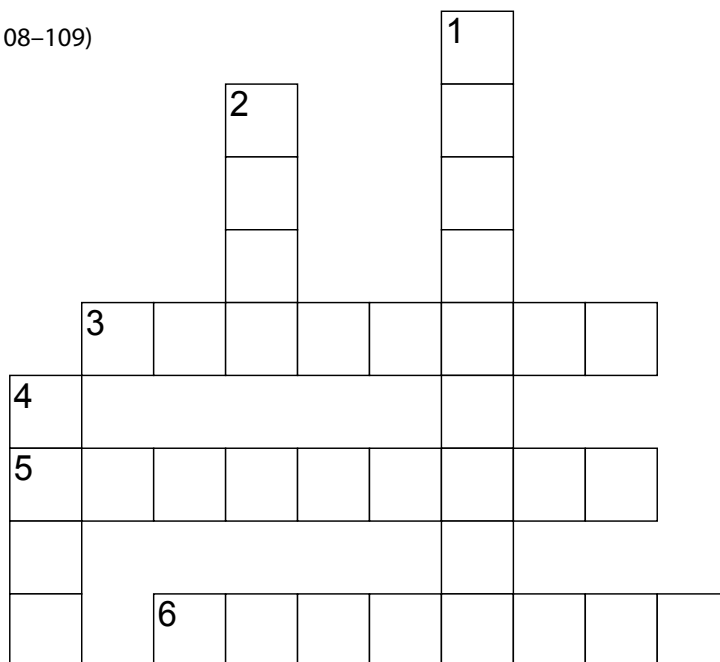
condense	boil	solidify
evaporate	melt	sublimate

### Across

- 3) to change state from a liquid to a solid
- 5) to change state from a liquid to a gas
- 6) to change state from a gas to a liquid

### Down

- 1) to change state directly from a gas to a solid, or from a solid to a gas
- 2) the agitated state of a liquid when it is at the temperature where it changes from a liquid to a gas
- 4) to change state from a solid to a liquid



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## Week 2 Activity Sheets

5. Why does pressure affect a substance's current state? (p. 110) \_\_\_\_\_

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6. **Critical Thinking:** Describe some of the physical properties of pure water. (p. 112)

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---

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7. How do chemical properties differ from physical properties? (p. 112)

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8. How is baking a cake an example of a chemical reaction? (p. 112)

---

---

---

9. Why won't tap water boil at 100°C? (p. 113) \_\_\_\_\_

---



10. **Critical Thinking:** When you dissolve sugar in water at room temperature, there will come a time when the sugar stops dissolving—no matter how long you stir. At this point, we say the solution is saturated—the water has been loaded to capacity. Based on your reading, can you think of a way to get more sugar to dissolve? (p. 113)

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# Science G

## Week 3 Schedule

Date:	Day 1	Day 2	Day 3	Day 4	Day 5
<b>What's Science All About?</b>	pp. 114–115	pp. 116–117	pp. 118–119		
<b>Activity Sheet Questions</b>	#1–2	#3	#4–5		
<b>Optional: Do Together</b>			Electrolysis		
<b>TOPS #13: Cohesion/ Adhesion</b>				#3 Adhesion	
<b>Supplies</b>	<b>We provide: GSK</b> —dropper bottles from activity #1, wax paper. <b>You provide:</b> scissors, jar or glass, timer or clock with second hand.				
<b>Shopping/Planning List</b>	<b>For next week:</b> No new items needed next week.				
<b>Other Notes</b>					

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# Notes

## Week 3

### Day 1

**What's Science All About** | pp. 114–115

**Activity Sheet Questions** | #1–2

### Day 2

**What's Science All About** | pp. 116–117


**Activity Sheet Questions** | #3

### Day 3

**What's Science All About** | pp. 118–119

**Activity Sheet Questions** | #4–5

**Optional: Do Together** | Electrolysis

Take what your children learned about electrolysis today one step further. Since you probably do not want to try electrolysis by yourself at home, go to [www.youtube.com](http://www.youtube.com) to find a video about electrolysis. Visit our IG links page for a video we think your children will particularly enjoy .

Did they realize that electrolysis of water could be used to break down water into hydrogen and oxygen atoms, thereby providing the basic building blocks of a possible alternative fuel? How might these elements (and their potential energy) be converted or otherwise used as a power source? Do they think they might someday drive a hydrogen-powered vehicle? Why or why not? What might the benefits be? Are there any particular drawbacks?

Use this time to discuss the importance of developing alternative sources of energy. What, if any, alternative energy sources can be found near your home? Are any of them being utilized today? If so, which ones?

### Day 4

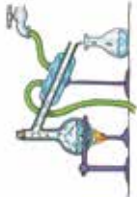
**TOPS #13: Cohesion/Adhesion** | #3 Adhesion ■



### Week 3 Activity Sheets

#### What's Science All About?

- Describe a method you might use to separate... (pp. 114–115)  
 ... a mixture of gravel and water: (let the water stand and allow the gravel to sink to the bottom—or use a strainer to strain off the water)  
 ... a mixture of iron filings and baby powder: (use a magnet to pull out the iron filings)  
 ... a solution of salt and water: (distill it: boil the solution—the water will evaporate away from the salt)



- Why is it possible to separate substances in a mixture? (p. 114–115)  
(because the properties of substances in a mixture stay the same after they have been mixed, so you can use their properties to help you separate them)
- Briefly describe each separation technique. (pp. 115–117)  
 Distillation: (purifying substances using boiling points: since different substances boil at different temperatures, chemists can boil a solution and capture and cool the gas as it condenses, again to separate substances)  
 (Paper) Chromatography: (a solvent is absorbed along the length of a piece of paper. Some solutes spread farther apart than others depending on how strongly they stick to the paper)  
 Centrifugation: (chemists will place solutions of substances with different densities in tubes and then into a centrifuge: the centrifuge spins around really fast which forces the densest solutes toward the bottom of the tube)

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### Week 3 Activity Sheets

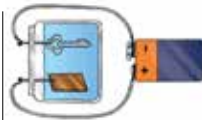
- How does a compound created by a chemical reaction differ from a mixture? (pp. 105, 114–118)

#### Compound

(bonds between atoms were broken and rearranged to form new compounds, so the compounds have different properties from those of the elements they contain)

#### Mixture

(components are more easily separable; components still have the same properties as they did when they were separate)



- Briefly describe the electrolysis process. (p. 118) (a compound is melted or dissolved in a solvent to make an electrolyte. Then, chemists pass an electric current through it, causing the compound to break apart)

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## Week 3 Activity Sheets

### What's Science All About?

1. Describe a method you might use to separate... (pp. 114–115)

... a mixture of gravel and water: \_\_\_\_\_

\_\_\_\_\_

... a mixture of iron filings and baby powder: \_\_\_\_\_

\_\_\_\_\_

... a solution of salt and water: \_\_\_\_\_

\_\_\_\_\_



2. Why is it possible to separate substances in a mixture? (p. 114–115)

\_\_\_\_\_

\_\_\_\_\_

3. Briefly describe each separation technique. (pp. 115–117)

Distillation: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Paper) Chromatography: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Centrifugation: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Week 3 Activity Sheets

4. How does a compound created by a chemical reaction differ from a mixture? (pp. 105, 114–118)

Compound	Mixture

5. Briefly describe the electrolysis process. (p. 118) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## Science G—Weekly Subject List

Week	Subject
1	introduction to chemistry/applied chemistry (inventions)/atoms/chemical reactions/compounds/mixtures/elements/cohesion
2	states (solid, liquid, gas)/temperature/changing states/molecules/air pressure/physical properties/chemical properties/substances/cohesion in water
3	filtration/distillation/chromatography/centrifugation/electrolysis/adhesion
4	atoms/nucleus/protons/neutrons/electrons/substances/compounds/periodic table/elements/metals/metalloids/non-metals/cohesion/adhesion
5	pure elements/compound elements/nucleus shells/bonding (ionic, covalent)/ ionic compounds/covalent compounds/crystals/covalent bonds
6	nuclear reactions/radiation/history of atoms/reactions/by-products/endothemic/exothermic/isotopes/bonds
7	activation energy/reactivity/catalysts/inhibitors/equations/law of conservation of mass/displacement reaction/decomposition/reversible reactions/surface tension
8	oxidation/reduction/combustion/acid/base/corrosion/alkali/salts/pH scale/indicators/soap/cohesion/adhesion
9	plastics/carbon chemistry/DNA/metals/solutions/molecules/capillary action
10	reactivity series/gases/non-metals/mass spectrometer/capillary action
11	substance identification/origins of elements/geology/rock cycle/atmosphere/greenhouse effect/living chemistry (medicines)/capillary pathways
12	body chemistry/chemistry history timeline/physics/physicists/energy/space/applied physics (inventions)/origins of the universe/Big Bang/atoms/molecules/elements/chromatography
13	electrons/neutrons/protons/quarks/gluons/speed and motion/mass/momentum/force/friction/chromatography
14	Newton's Laws/inertia/machines/gravity/air resistance/terminal velocity/centripetal force/centrifugal force/oil and water molecules/interference patterns
15	center of gravity/pressure/density/volume/displacement/surface tension
16	energy/energy transfer/fossil fuels/global warming/alternative power sources (wind, water, solar, nuclear)/solids/liquids/gases/evaporation/condensation/temperature/expansion/contraction/thermometers/conduction/convection/radiation/insulation/wave interference
17	waves/wavelength/oscillation/electromagnetic spectrum/light physics/rainbows/solar spectrum/reflection/light scattering/waves/color interference patterns
18	refraction/lenses/sound energy/frequency/sound waves/echoes/sonar/sound and light/cohesion/surface area
19	batteries/circuits/currents/circuit diagram/cohesion minimal surface area
20	magnetism/magnetic fields/electromagnetism/electromagnets/space/astrophysics/stars/sun/moon/eclipse/solar system/physics timeline/geometry
21	introduction to biology/living things (commonalities)/classification/vertebrates/invertebrates/plants/cohesion/adhesion
22	cells/organs/viruses/bacteria/protists/microbes/medicines/flow charts/separating mixtures
23	human body/skeletal system/muscles/brain/nervous system/senses/digestive system/respiratory system/circulatory system/separating mixtures
24	reproductive system/genes/animal biology/botany/photosynthesis/separating mixtures/flow charts

## Science G—Weekly Subject List (cont.)

Week	Subject
25	plant biology/ecology/habitat/environment/population/ecosystems/keystone species/food chain/carnivores/herbivores/omnivores/pollution/climate change/biology timeline/chemical reactions
26	earth/maps/seasons/rocks/minerals/fossils/Earth's resources/Earth's energy/identify chemical reactions
27	volcanoes/natural hot water/earthquakes/earthquake safety/identify chemical reactions
28	tsunamis/carbohydrates/ atmosphere/air and ocean currents/natural cycles/climate change/world climates/rainforests/analysis/tropical grasslands/identify chemical reactions
29	monsoons/deserts/Mediterranean climates/temperate climates/polar regions/mountains/changing climates/litmus tests
30	weather/analysis/water and clouds/thunderstorms/windstorms/photochemistry/floods/droughts/cold/heat/strange weather/forecasting/dilution/neutralization
31	plant/ecosystems/population/farming/farming methods/litmus tests/titration
32	soil/weathering/erosion/analysis/rivers/river erosion/ground water/acid-base indicators
33	glaciers/coasts/seas and oceans/maps/scientific method/experiments/hypothesis/formulas/chemical equations/atoms/science terms/reference information/analysis/pH
34	Gregor Mendel/pollination/genotype and phenotype/alleles/heterozygous vs. homozygous/dominant vs. recessive traits/Punnett squares/cells/mitosis/acid-base indicators
35	DNA/chromosomes/genes/genomes/meiosis/buffers/equilibrium
36	sex-linked traits/trait inheritance/probability/RNA/translation/mutations/DNA fingerprinting/gene therapy/cloning/ethics

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