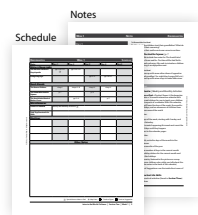


Instructor's Guide Quick Start

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.



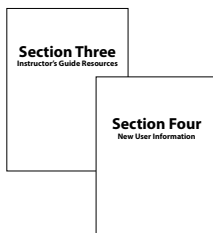
4-Day Schedule

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]

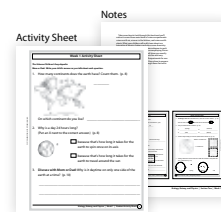


Instructor's Guide Resources and New User Information

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. We provide a blank cell on Day 5 to allow for your own activities and topics that you would like to teach your children.

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 1		WEEK 1					SCHEDULE
Date:	Day 1	Day 2	Day 3	Day 4	Day 5		
<i>Usborne World of Animals</i>	pp. 6–7	pp. 8–9	pp. 10–11				
Activity Sheet Questions	#1 N	#2–3	#4–5				
Optional: Do Together	Kids' Choice		The World Around You				
Discover & Do Level 1 DVD				Introduction to science with magnets Tracks #35–38			
Science Activities, Vol. 1				"What can a magnet do?" pp. 26–27			
Activity Sheet Questions				#6			
Supplies	N We provide: NSKB—2 magnets, thumbtacks, paper clips, tape. You provide: Science Notebook (N); sheets of paper tied with yarn or a spiral bound notebook or an artist's sketchbook (use for all experiments); assorted items (examples: jewelry, keys, coins, bottle caps, mug, scissors, foil, etc.); thread; paper; paints or crayons; large box.						
Shopping/Planning List	For next week: ruler, scissors, thread.						
Other Notes							

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Day 1

Usborne World of Animals | pp. 6–7

The book says, "Earth is the only known planet to support living things." Isn't that amazing? Scientists known as astrobiologists attempt to find signs of life in space. While other planets have been discovered that appear to have the necessary conditions to support life, they are much too far to travel to, or communicate with.

As the book points out, a basilisk lizard can run on water. But it can do so only because it doesn't weigh much (from 2 grams up to about 7 ounces) and because it moves quickly.

Activity Sheet Questions | #1

Note to Mom or Dad: Find each week's Activity Sheets immediately after the notes and answer the questions assigned on the schedule page. Each Activity Sheet has a corresponding Answer Key page at the end of each week's notes.

Suggestion: Your student's 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 sets of the Activity Sheets may be purchased for each child (Item #BSB1).

Occasionally we assign a "cut-out" activity. Please find these separate sheets in **Section Three** of your guide. If you like, color the sheets first, then cut them out and attach them to the worksheet.

N Special Note to Mom or Dad

Animals, Astronomy, and Physics | Section Two | Week 1 | 1

Date:	Day 1 ¹	Day 2 ²	Day 3 ³	Day 4 ⁴	Day 5 ⁵
Diary of an Early American Boy	Author's Note, chaps. 1–2	pp. 12–19 (end before journal entry)	pp. 19–24		
Activity Sheet Questions	#1–5 [N]	#6	#7–8		
Optional: Do Together		A Journal of Their Own		Building Bridges	
Discover & Do Level 4 DVD				Science with Electricity Tracks Introduction, #11	
TOPS #32: Electricity				#1 "It Works!" [N]	
Supplies	We provide: ESK —masking tape, aluminum foil, D-cell batteries, flashlight bulbs. You provide: scissors, pencil. [N]				
Shopping/Planning List	For next week: foil ribbon from #1 "It Works!"				
Other Notes					

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Day 1

Diary of an Early American Boy | Author's Note, Chapters 1–2

Activity Sheet Questions | #1–5

Activity Sheets

Note to Mom or Dad: Please read "Recommendations for Teaching Science" and "Using Our Activity Sheets" in **Section Three**.

Occasionally we assign a "cut-out" activity. These are separate sheets you will find in Section Three.

Supplies

Note to Mom or Dad: When supplies are listed as "We provide:" they are materials found in your Science 4 Supplies Kit (ESK). When supplies are listed as "You provide:," they are materials you can generally find around your home. When supplies are listed as *Light & Color*, they are materials that are included with your *Light & Color* book.

Day 2

Diary of an Early American Boy | pp. 12–19 (end before journal entry)

Activity Sheet Questions | #6

Optional: Do Together | A Journal of Their Own

Help your children get into the spirit of reading *Diary of an Early American Boy* by encouraging them to start their own journal today. If they are excited about the idea, feel free to take a trip to the store to pick out a unique journal, special paper, and/or pens/pencils to use just for journaling.

Challenge them to think about what types of things about their daily existence might intrigue young readers 50 or 100 years from now. What would they find fascinating? What would they want to know more about? Use these discussions as starting points for journaling.

Urge your children to include their own illustrations, just like Noah Blake does in his journal. Can they bring their

[N] Special Note to Mom or Dad

journal entries to life like Noah does? Let them spend as much time as they want working on this activity. The extra writing practice is just a bonus that you can “slip” by them if they’re having fun!

Day 3

Diary of an Early American Boy | pp. 19–24

Activity Sheet Questions | #7–8

Day 4

Optional: Do Together | Building Bridges

This week, your children read about building a new bridge across Red Man Brook. What did they think of the process described? Could they imagine helping out with such a huge project? Why or why not?

If at all possible, take a field trip to view a local bridge up close. It could be a long suspension bridge across a river or a bay, or a simple one-lane country bridge across a mostly-dry creek bed. Size and type doesn’t matter a bit. Just try to find a bridge structure of some type (a walking bridge in a local park would work fine, too).

If possible, take the time to travel back and forth across the bridge. Is it possible to walk across on foot? Can you walk under or around it? How close can you get to examine it in depth? Can your children point out any similar features to the bridge Noah Blake described in his journal? How are they similar? What major differences do they see?

Have fun with this activity, and use it as an opportunity to bring their reading assignments to life in a unique way. Encourage curiosity and discussion. Feel free to go off on a tangent, if your children’s interests lead down a new and interesting path.

Discover & Do Level 4 DVD

This fun and educational video is included so you and your children can watch “Professor Justin” perform each of the assigned experiments from the *TOPS* science activity books, *Light & Color*, and *The Usborne Complete Book of the Microscope*. We recommend you gather your supplies, watch the DVD to see what to do, and then try each of these simple experiments yourself.

Or, if you prefer, you can do the experiment(s) on your own and then watch the DVD to see how it turned out on screen. You may want to mix and match to find out what works best. We hope this video makes your science experiments more enjoyable and more educational.

If your experiments don’t happen exactly as you see in the video, it’s OK! Watch the Outtakes in the Bonus section of the DVD and see how things didn’t always happen perfectly for us, either.

We’re excited about all the content featured in *Discover & Do Level 4 DVD*! You may notice, however, that not all the tracks are scheduled. Since the DVD was created, we’ve added some amazing science books to our Instructor’s Guide, but we’ve also removed a few resources that used to coincide with the “Science in Motion” section on the disc. You and your children are welcome to view the unscheduled tracks (#59–65) for fun, but consider them optional.

Please navigate your *Discover & Do Level 4 DVD* by using the DVD menu on your screen.

Discover & Do Level 4 DVD | Science with Electricity Tracks Introduction, #11

TOPS #32: Electricity | #1 “It Works!”

Note to Mom or Dad: You will need to use this foil ribbon (or make more, just like it) in future activities. ■

Week 1 Activity Sheet

Diary of an Early American Boy

1. What does the author particularly admire or not admire about old things? (p. viii)

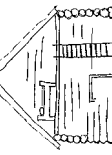
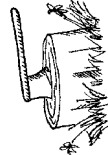
He does not admire	He does admire
(how old they are)	(how carefully and beautifully people created things)
	(how aware people were of the materials they worked with)
	(how aware they were of the time in which they lived)

2. What evidence does he give for the idea that people were very aware of the time in which they lived? (p. viii)

_____ (they dared and signed almost everything they made)

3. What are some good rules to keep in mind when keeping and handling an axe? List three. (pp. 8–9)

- 1) (hide the blade)
- 2) (rub handle with fat)
- 3) (don't leave it in a position where someone might accidentally trip over or run into the handle)



4. Why was the loft the warmest spot in the house? (p. 10)
(because it was up high and hot air rises over cooler air)

5. Can you name three different kinds of ladders the pioneers used in their cabins? Draw a picture of one example. (p. 11)

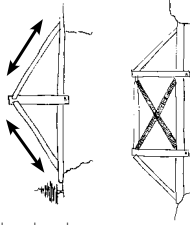
- (split-pole)
- (barn-beam (wood pegs) ladder)
- (notched log stair)
- (folding)
- (ladder plank) (extra steps—holes cut into a plank)

Week 1 Activity Sheet

6. What was a "stone-boat"? (p. 17) (a toboggan-like sled used to slide stones over grassy areas)

7. How do compression pieces hold up the king post? Draw arrows on the bridge below to show the direction(s) in which they push. (p. 24)

(as gravity pulls on the compression pieces, they push together on the king post and hold it in place)



8. What is the difference between a queen post truss and a king post truss? (p. 23)
(a queen post truss is basically two king post trusses put together for a longer bridge)

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Week 1 Activity Sheet

Diary of an Early American Boy

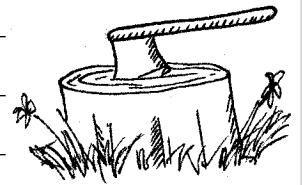
1. What does the author particularly admire or not admire about old things? (p. viii)

He does not admire	He does admire

2. What evidence does he give for the idea that people were very aware of the time in which they lived? (p. viii)

3. What are some good rules to keep in mind when keeping and handling an axe? List three. (pp. 8–9)

- 1) _____
 - 2) _____
 - 3) _____
- _____



4. Why was the loft the warmest spot in the house? (p. 10) _____

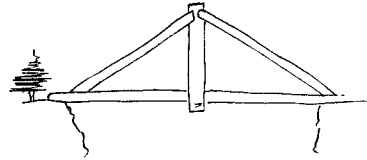


5. Can you name three different kinds of ladders the pioneers used in their cabins? Draw a picture of one example. (p. 11)

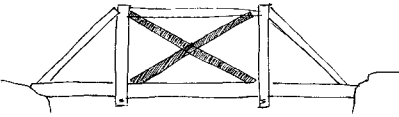
Week 1 Activity Sheet

6. What was a "stone-boat"? (p. 17) _____

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8. What is the difference between a queen post truss and a king post truss? (p. 23)



Date:	Day 1 ⁶	Day 2 ⁷	Day 3 ⁸	Day 4 ⁹	Day 5 ¹⁰
Diary of an Early American Boy	pp. 25–33	pp. 33–40	pp. 40–49		
Activity Sheet Questions	#1–3	#4–5	#6–9		
Optional: Do Together		Woodworking		Tools of the Trade	
Discover & Do Level 4 DVD				Tracks #12, #13	
TOPS #32: Electricity				#2–3 "To Light ..." thru "Light Bulb ..."	
Activity Sheet Questions				#10–12	
Supplies	We provide: ESK—D-cell batteries, flashlight bulbs. You provide: foil ribbon from #1 "It Works!"				
Shopping/Planning List	For next week: foil ribbon from #1 "It Works!"				
Other Notes					

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Day 1

Diary of an Early American Boy | pp. 25–33

Activity Sheet Questions | #1–3

Day 2

Diary of an Early American Boy | pp. 33–40

Activity Sheet Questions | #4–5

Optional: Do Together | Woodworking

What did your children think of Noah's journal entries this week? Have they ever created anything out of wood with their bare hands? Today, give them that opportunity.


Find a suitable woodworking project that you're all comfortable with. It could be as simple as whittling a stick your children find in the back yard. What could your children make out of a stick? Let their imaginations run wild. Help them envision a project and then work side-by-side with them to complete it.

Or, if you prefer, feel free to pick up a fun project at a local craft store. There are lots of options out there: model cars and trains made out of wood, homemade crafts for various holidays, pioneer pencils, etc. Use the time together to discuss *Diary of an Early American Boy*. Do your children enjoy pretending to be like Noah Blake? What do they like/dislike about the process of woodworking? Why? If they take an interest in doing some project in particular, use it as a good source for a follow-up activity!

Day 3

Diary of an Early American Boy | pp. 40–49

Activity Sheet Questions | #6–9

 Special Note to Mom or Dad

Day 4

Optional: Do Together | Tools of the Trade

What did your children think of the primitive tools that Noah Blake used? How do they think these tools have changed since then?

If possible, take a field trip to a hardware store today to look at some modern tools. What do your children think of the progress that has been made since Noah Blake's time? What do they think Noah would think of some of these tools?

Can they find any tools that haven't changed substantially since Noah's day? A basic saw perhaps? Sure, it might be made of better materials today, but has the basic design changed that much? What do they think?

What tool do they think would most amaze Noah? Why? What types of jobs necessitate some of the tools they see? Were these types of tasks even within Noah's wildest dreams? Why or why not?

Discover & Do Level 4 DVD | Tracks #12, #13

TOPS #32: Electricity | #2–3 "To Light or Not to Light" through "Light Bulb Predictions"

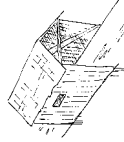
Activity Sheet Questions | #10–12 ■

Week 2 Activity Sheet

Diary of an Early American Boy



1. Why didn't a good carpenter use nails? (p. 26) (nails only split boards and rust the cracks into rot)
2. Why can we be certain that George Washington never crossed any covered bridges? (p. 28) (because he died before 1805 when the first bridge in America was covered)



3. Why was it a good idea to cover a bridge with walls and a roof? (p. 27) (because covered bridges were protected from the elements and therefore would last much longer than a bridge that wasn't covered)

4. What is the advantage of using a canal for transportation? (p. 37) (it makes it much easier to move heavy loads from one place to another)

5. Talk it out then write it down: Explain your answer verbally to Mom or Dad, then write it below. (p. 38)
 What physical principle does a canal use to make your job easier? (it reduces friction)

6. Why were almanacs so important to early farmers? (p. 44)



(because the weather determined what work they could do and the Almanac was the best tool they had for timing the seasons)

7. Describe one situation in Noah's day in which an almanac was useful. (p. 44)



(Answers will vary. Possible: If a farmer needed to take his cattle on a 3-day journey to market, he would consult his almanac to find out when the moon would be full so he knew he could travel at night)

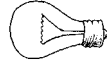
Week 2 Activity Sheet

8. Why did early farmers often work at night? (pp. 45-46) (because they had a lot of work to do and because it was cooler at night)

What did they use for light? (the moon and stars)

9. Can you think of another current-day profession that works at night for the same reasons? (pp. 45-46) (Possible: road construction crews often work through the night because temperatures are cooler and there is usually less traffic)

TOPS #32: Electricity



10. What is a contact point? (Light Bulb Predictions #3) (a point through which electricity can flow)



4

1

2

3

1

2

3

4

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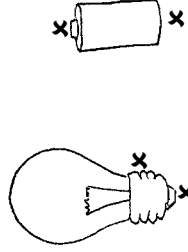
4

1

2

3

4



11. How many contact points are needed to light a bulb? (Light Bulb ... #3)

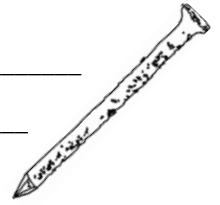
12. Draw an "x" showing where each contact point is located. (Light Bulb Predictions #3)

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Week 2 Activity Sheet

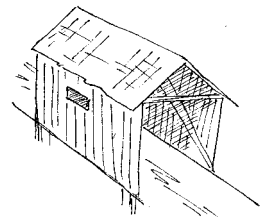
Diary of an Early American Boy

1. Why didn't a good carpenter use nails? (p. 26) _____



2. Why can we be certain that George Washington never crossed any covered bridges? (p. 28)

3. Why was it a good idea to cover a bridge with walls and a roof? (p. 27)

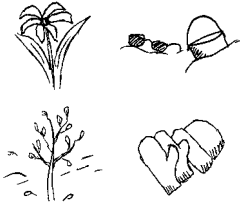


4. What is the advantage of using a canal for transportation? (p. 37) _____

5. Talk it out then write it down: Explain your answer verbally to Mom or Dad, then write it below. (p. 38)

What physical principle does a canal use to make your job easier? _____

6. Why were almanacs so important to early farmers? (p. 44)



7. Describe one situation in Noah's day in which an almanac was useful. (p. 44)



Week 2 Activity Sheet

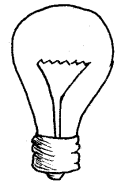
8. Why did early farmers often work at night? (pp. 45–46)

What did they use for light? _____

9. Can you think of another current-day profession that works at night for the same reasons? (pp. 45–46)

TOPS #32: Electricity

10. What is a contact point? (Light Bulb Predictions #3) _____

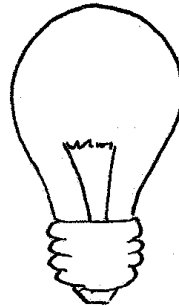


11. How many contact points are needed to light a bulb? (Light Bulb ... #3)

1 2 3 4

12. Draw an "x" showing where each contact point is located.

(Light Bulb Predictions #3)



Date:	Day 1 ¹¹	Day 2 ¹²	Day 3 ¹³	Day 4 ¹⁴	Day 5 ¹⁵
Diary of an Early American Boy	pp. 49–55	pp. 56–63	pp. 63–69		
Activity Sheet Questions	#1–3	#4–6	#7–9		
Optional: Do Together		Time to Journal!		Hay Rick Ornament	
Discover & Do Level 4 DVD				Track #14	
TOPS #32: Electricity				#4 “Series Means in a Row”	
Activity Sheet Questions				#10–13	
Supplies	We provide: ESK —paper clips, tape, flashlight bulb, D-cell battery. You provide: foil ribbon from #1 “It Works!”				
Shopping/Planning List	For next week: foil ribbon from #1 “It Works!”				
Other Notes					

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Day 1

Diary of an Early American Boy | pp. 49–55

Activity Sheet Questions | #1–3

Day 2

Diary of an Early American Boy | pp. 56–63

Activity Sheet Questions | #4–6

Optional: Do Together | Time to Journal!

Today, encourage your children to write an illustrated journal entry about something exciting that has happened in their lives during the past week or so. Did they meet a new friend? Discover a new hobby? Achieve a great victory in a sport?

Whatever it may be, urge them to memorialize their experience in a journal entry. Make sure they include words

of emotion that convey how they felt about the event, as well as describing it in detail. Can they make their journal readers feel the event the way they did?

Adding a detailed illustration—just like Noah Blake does so often—can help convey their message more powerfully. Make sure they take their time and really work to capture the moment that’s stuck in their minds. Be very excited about what a great job they do!

Day 3


Diary of an Early American Boy | pp. 63–69

Activity Sheet Questions | #7–9

Day 4

Optional: Do Together | Hay Rick Ornament

Today, let your children come up with an idea for and make their very own homemade hay rick ornament. What

 Special Note to Mom or Dad

would they like to make? An animal? A symbol of some kind? What would they want to say about their pile of hay (if they had one)? Why?

Alternatively, let them make an ornament or decoration to place around your house. Do they enjoy creating things? Why or why not? What purposes do they see in art? Can there be a higher purpose in something that seems purely for decoration? If so, what?

Use this time together to discuss the nature of beauty and art. Why do we humans crave beauty and enjoy art? Why do we seek to decorate things? Why do we look beyond the pure utilitarian function of items to see more? Have fun and let your children have free reign with their creative sides!

Discover & Do Level 4 DVD | Track #14

TOPS #32: Electricity | #4 "Series Means in a Row"

Activity Sheet Questions | #10-13 ■

Week 3 Activity Sheet

Diary of an Early American Boy

1. What is a humblebee? (p. 51)


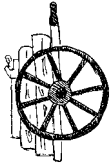
a wasp a hornet a fly a bumblebee

Why was it called that? early Quakers were called "the humble people" because they refused to fight or kill, and humblebees were not thought to fight or sting

2. Why were sleds used all year long? (p. 53)

because they moved heavy loads more easily across unimproved roads than a wheeled cart did

3. Use the diagrams below to explain to Mom or Dad why a sled worked better than a wheeled cart. Then write your answer in the space provided. (p. 53)





(In a cart, all of the weight of the load pushes into the ground at the same small point—the bottom of the wheel. On a sled, the weight is more evenly distributed across the ground, so it isn't as heavy in any one spot, which means that a sled won't sink as easily.)

4. Why was wood the standard material for building fences in 1805? (pp. 58-59)

because wood was still very plentiful, and barbed wire wasn't invented until 1873

Challenge! How do you think a farmer chose whether to use stones, stumps or wood to build fences around his field? (Possible: The farmer probably chose to use whichever building material was most plentiful in the field he was trying to clear)



Electricity, Magnetism, and Astronomy | Week 3 | Student Activity Sheet **5**

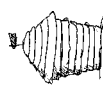
Week 3 Activity Sheet

5. Answer the following questions to describe how the wheelbarrow was invented. (p. 58)
 What was a handbarrow? *(a stretcher-like device that allowed two men to carry a load between them)*
 How was a sledgebarrow better than a handbarrow? *(one person could slide a load on two runners which was easier than carrying it)*
 Why do you think a wheel was eventually added in place of the runners? *(Possible: because the wheel made it easier to move the load)*

6. Name two reasons why having a standard length for fence rails was helpful. (p. 60)

- (you could count fence rails to measure land; two rails were the legal width of a road; you could use a rail as a giant ruler to measure out more land, etc.)*

7. Why were hay-ricks so carefully constructed? (p. 64)



(to withstand the elements—to not blow away in the wind and to shed away rain so the hay wouldn't rot)

8. Why did carpenters use many kinds of wood in a single piece of furniture? (p. 68)

(because the different types of wood could work against each other in dry and damp weather, and would help the furniture to stay together and not break)



9. Which would last longer—one of today's cars or a wagon from Noah's time? (p. 69)
(a wagon)

Why? (because items were so well made back then, and a wagon was specially designed to weather the elements)

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Week 3 Activity Sheet

TOPS #32: Electricity

Fill in the blanks with the correct answer from the word bank. (Series Means in a Row #4)

_____ circuit _____ opposition _____ series _____ current

10. A _____ (series) _____ combines multiple power sources to add strength to the job.

11. _____ (Opposition) _____ is when the electrons are flowing in opposite directions.

12. A _____ (circuit) _____ is the flow of electrons.

13. A _____ (current) _____ is moving electricity.

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Week 3 Activity Sheet

Diary of an Early American Boy

1. What is a humblebee? (p. 51)

a wasp

a hornet

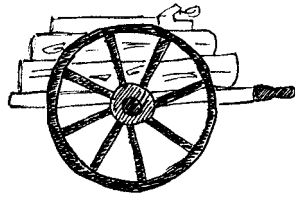
a fly

a bumblebee

Why was it called that? _____

2. Why were sleds used all year long? (p. 53)

3. Use the diagrams below to explain to Mom or Dad why a sled worked better than a wheeled cart. Then write your answer in the space provided. (p. 53)



4. Why was wood the standard material for building fences in 1805? (pp. 58–59)

Challenge! How do you think a farmer chose whether to use stones, stumps or wood to build

fences around his field? _____



Week 3 Activity Sheet

5. Answer the following questions to describe how the wheelbarrow was invented. (p. 58)

What was a handbarrow? _____

How was a sledgebarrow better than a handbarrow? _____

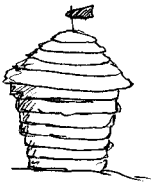
Why do you think a wheel was eventually added in place of the runners? _____

6. Name two reasons why having a standard length for fence rails was helpful. (p. 60)

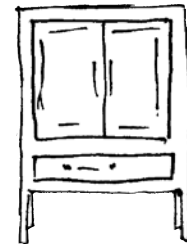
1) _____

2) _____

7. Why were hay-ricks so carefully constructed? (p. 64)



8. Why did carpenters use many kinds of wood in a single piece of furniture? (p. 68)



9. Which would last longer—one of today's cars or a wagon from Noah's time? (p. 69)

Why? _____

Week 3 Activity Sheet

TOPS #32: Electricity

Fill in the blanks with the correct answer from the word bank. (Series Means in a Row #4)

circuit

opposition

series

current

10. A _____ combines multiple power sources to add strength to the job.

11. _____ is when the electrons are flowing in opposite directions.

12. A _____ is the flow of electrons.

13. A _____ is moving electricity.

Science 4—Weekly Subject List

Week Subject

- 1 early Americana/electricity
- 2 early Americana/electricity
- 3 early Americana/electricity
- 4 early Americana/electricity
- 5 early Americana/electricity/magnetism
- 6 electricity/magnetism
- 7 electricity/magnetism
- 8 electricity/magnetism
- 9 electricity/magnetism
- 10 electricity/magnetism/Alexander Graham Bell/telephone
- 11 Alexander Graham Bell/scientific method/atoms/elements/electrons/protons/neutrons/periodic table/electricity
- 12 energy particles/atoms/particle accelerators/elements/X-rays/forensic science/molecules/liquids/solids/gases/electricity
- 13 crystals/chemical compounds/energy particles/dark matter/water/electricity
- 14 metals/plastics/carbon/silicon/electricity
- 15 biomimicry/energy/nuclear power/alternative energy/physics/forces/electricity
- 16 gravity/black holes/Albert Einstein/time/pressure/sound vibrations/electricity
- 17 sound/heat energy/low temperatures/electrical current/electricity
- 18 electrical charges/static electricity/lightning/Tesla coil/neurons/central nervous system/magnetism/electromagnetism/electricity
- 19 electromagnetic spectrum/microwaves/X-rays/light/lasers/color/electricity
- 20 optical illusions/light/shadows/magnetism
- 21 light/bending light/refraction/lenses/magnetism
- 22 color/prisms/spectrum/light/dispersion/filters/magnetism
- 23 computers/Internet/artificial intelligence/robotics/magnetism
- 24 nanotechnology/genetics/DNA/cells/cloning/cybernetics/virtual reality/magnetism
- 25 microscopes (optical/electron)/using a microscope/viewing paper, print, fibers, and fabrics/magnetism
- 26 microscopes/archaeology/forensic science/viewing hair, teeth, and tongue/cells/magnetism
- 27 microscopes/nucleus/DNA/genes/bacteria/viruses/medicine/vaccines/surgery/plant cells/plant food/magnetism
- 28 microscopes/plant reproduction/pollen/water plants/fungi/food science/insects/microscopic life/magnetism
- 29 microscopes/pests/insects/sand and rocks/microfossils/crystals/magnetism
- 30 microscopes/metals/micromachines/nanotechnology/early microscopes/germs/contemporary microscopes
- 31 microscope/magnetism/astronomy/universe
- 32 space/solar system/sun/eclipses/Venus/magnetism
- 33 Earth/Moon/Mars/Jupiter/Saturn/Uranus/magnetism
- 34 Neptune/Pluto/asteroids/comets/meteors/exploring space/famous astronauts/stars/galaxy/magnetism
- 35 Milky Way galaxy/birth of stars/life of stars/variable stars/constellations/describing stars/magnetism
- 36 maps of the stars/constellations/home astronomy/star photographs/telescopes/astronomy facts/map of the moon/magnetism