



| SCIENCE A | | WEEK 1 | | | | | SCHEDULE |
|--------------------------------------|--|--------------------|------------------------------|-----------------------------------|--------------------|--|----------|
| Date: | Day 1 ¹ | Day 2 ² | Day 3 ³ | Day 4 ⁴ | Day 5 ⁵ | | |
| <i>Children's Encyclopedia</i> | pp. 8–9 | pp. 10–11 | pp. 12–13 | | | | |
| Activity Sheet Questions | #1–2 [N] ¹ | #3–4 | #5–7 | | | | |
| 5-Day: Tadpoles and Frogs | | | | | pp. 3–7 | | |
| Discover & Do Level K DVD | | | | "Before You Begin" Tracks #1–3 | | | |
| Optional: Do Together | | | The Seasons at Your House | | | | |
| Science Activities, Vol. 2 | | | | "Air All Around" pp. 2–3 | | | |
| Supplies | You provide: sheets of paper, 8"x10" cardboard for each player (optional: crayons, thread or string or yarn) bottle, bowl, water. [N] | | | | | | |
| Shopping/Planning List | For next week: feather from any bird, plate, 10"x10" paper, pencil, scissors, crayons, needle, thread or string or yarn. | | | | | | |
| Other Notes | | | | | | | |
| | | | | | | | |

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1. The [N] symbol means there is an important note immediately following the schedule.

Day 1

Children's Encyclopedia | pp. 8–9

Let your children know how amazing it is that so many things have to work just right in order for our world to support life. For example, if we were too close to the sun, our world would be too hot to support life. If we were too far, it would be too cold. Isn't amazing what God has done in His creation? He's made things just right to support life on Earth.

The book mentions continents, but doesn't list them. The seven continents are North America, South America, Europe, Asia, Africa, Australia, and Antarctica. Find a map at the back of the book on page 286–287 and show your children the continents. [p. 8]

Notice the "Internet links" box at the top of the page. It is not necessary to visit all these links as part of your reading, but if you'd like to just follow the link listed in the book for supplemental online material.

The book mentions what the earth is made of, but doesn't properly label the layers. The outer layer is called the crust, next there is the mantle, then in the center is the core. One idea to help your children visualize the layers of the earth is to compare the earth to an egg. The shell is the crust, the white part is the mantle, and the yolk is the core. For a hands-on visual, hard-boil an egg and talk about each part. To see the "mantle" and the "core," you'll need to peel away the "crust" first, but then cut the egg in half lengthwise for a nice cross-section of the "earth"! Of course, the earth is not shaped exactly like an egg, but neither is it perfectly round (there are flatter parts on the top and bottom). [p. 9]

Activity Sheet | Questions #1–2

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.

- 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.

Please don't expect your children to write the answers until they gain considerable proficiency at handwriting. We have provided a variety of activities to interest and challenge your children. Feel free to let your children do those activities 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.

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 (Item #ASG1).

Occasionally we assign a "cut-out" activity. Please find these separate sheets immediately after week 36. If you like, color the sheets first, then cut them out and attach them to the worksheet.

Supplies | You Provide

Note to Mom or Dad: When supplies are listed as "**We provide:**", they are materials found in either your course-specific (**ASK**) Supplies Kit or the Non-Consumable (**NSK**) Supplies Kit. When supplies are listed as "**You provide:**", they are materials you can generally find around your home.

Day 2

Children's Encyclopedia | pp. 10–11

Do you own a globe? If not, you can also use a ball such as a basketball or soccer ball to demonstrate the concept of day and night. All you need is a globe or ball and a flashlight. The flashlight, naturally, represents the sun. Shine the flashlight on one side of the globe or ball. The part of the world facing the light is experiencing day, while the other areas are experiencing night. But the world rotates, so as it turns day turns to night on one part of the globe, while night turns to day in other areas. [p. 10]

Activity Sheet | Questions #3–4

Day 3

Children's Encyclopedia | pp. 12–13

The book refers to the northern and southern hemispheres, but does not explain the concepts of western and eastern hemispheres. You might want to show your children a world map, noting the northern and southern hemispheres, as divided by the equator, while also pointing out the western hemisphere and the eastern hemisphere. This is also a good opportunity to review continents and continent names. [p. 13]

Activity Sheet | Questions #5–7**Optional: Do Together** | The Seasons at Your House

Using a large piece of poster board, draw a line down the middle in each direction so as to divide it into four equal parts. Label the upper left corner "Spring," the upper right corner "Summer," the lower left corner "Fall," and the

lower right corner “Winter.” Now ask your children to use crayons, markers, paint, colored pencils, etc. to draw a picture of what each of the seasons looks like where you live. As they draw, discuss the seasons and what’s different about each one. Ask them to think about how a stranger who just flew in from halfway around the world would be able to tell what season it is at any particular time. What clues would he find? Have fun with this activity, as your children learn more about how the seasons change in your particular area. When they’re done, proudly display their work of art on the refrigerator or a wall where everyone can see it.

Day 4

Discover & Do Level K DVD | “Before you Begin”
Tracks #1–3

We produced this fun and educational video so you and your children could watch “Professor Ike” perform each of the assigned experiments from *Science The Usborne Book of Science Activities, Vol. 2*. 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.

Note: Please navigate your *Discover & Do DVD* by using the DVD menu on your screen.

Science Activities, Volume 2 | “Air All Around” pp. 2–3

If you remember school science experiments as boring demonstrations without making much of a point, it’s time for you and your children to try *The Usborne Book of Science Activities, Vol. 2*. Packed with simple activities and experiments, this book will be your guide to the practical application of science throughout all 36 weeks of this curriculum.

Take some time to look through this book and you’ll notice it covers three main kinds of science experiments: science with air, science in the kitchen, and science with plants. What your children will really learn about are principles of physics, botany, and even some chemistry. But you won’t need an advanced science degree to work through these activities. In fact, our accompanying *Discover & Do DVD*, described previously, will show you exactly what to do to make these experiments fun and easy.

Note, too, that we’ve scheduled all experiments for one day during the week. That way you’ll have time to prepare and take your time as you work through these fun activities.

Day 5

5–Day: Tadpoles and Frogs | pp. 3–7

On Fridays, we will read interesting living science books that stand on their own. Simply read and enjoy them with your children. Toward the end of the year, we will do additional pages from the *The Usborne Internet-Linked Children’s Encyclopedia* that don’t line up easily with our science experiments. Enjoy! ■

Week 1 Activity Sheets



Children's Encyclopedia

Mom or Dad: Write your child's answer as you talk about each question.

1. How many continents does the earth have? Count them. (p. 8)



(7)

On which continent do you live? *(Answers will vary.)*

2. Why is a day 24 hours long?
(Put an X next to the correct answer.) (p. 8)



- because that's how long it takes for the earth to spin once on its axis
- because that's how long it takes for the earth to travel around the sun

3. **Discuss with Mom or Dad:** Why is it daytime on only one side of the earth at a time? (p. 10)

(As the earth turns, only one side faces the sun; one side of the earth is in light while the other side is in shadow.)

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Week 1 Activity Sheets



4. **Challenge:** Make the statement true. (Please find Cut-Out #1.) (p. 10)

The sun rises in the East and sets in the West.

5. Can you name the four seasons? (p. 12)

- 1) (Spring) 2) (Summer)
3) (Fall) 4) (Winter)

6. Use the map to help you answer. (Please find Cut-Out #2) (p. 13)



When it is summer in:



...it is winter in:



7. During which two seasons does the earth tilt toward or away from the sun? Circle them. (p. 13)



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Children's Encyclopedia

Mom or Dad: Write your child's answer as you talk about each question.

1. How many continents does the earth have? Count them. (p. 8)



On which continent do you live? _____

2. Why is a day 24 hours long?
(Put an X next to the correct answer.) (p. 8)



- because that's how long it takes for the earth to spin once on its axis
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Week 1 Activity Sheets

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The sun rises in the and sets in the .

5. Can you name the four seasons? (p. 12)

1) _____ 2) _____

3) _____ 4) _____

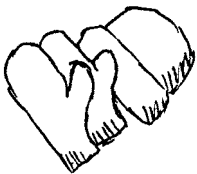
6. Use the map to help you answer. (Please find Cut-Out #2) (p. 13)



When it is summer in:

...it is winter in:

7. During which two seasons does the earth tilt toward or away from the sun? Circle them. (p. 13)



winter



spring



summer



fall

**SCIENCE A****WEEK 18****SCHEDULE**

| Date: | Day 1 ⁸⁶ | Day 2 ⁸⁷ | Day 3 ⁸⁸ | Day 4 ⁸⁹ | Day 5 ⁹⁰ |
|--|---|---------------------|---------------------|---------------------|---------------------|
| How Flowers Grow | pp. 18–21 | pp. 22–25 | pp. 26–29 | | |
| Activity Sheet Questions | #1–2 | #3–5 | #6–7 | | |
| 5-Day: Caterpillars and Butterflies | | | | | pp. 16–19 |
| Discover & Do Level K DVD | | | | Tracks #72–75 | |
| Optional: Do Together | | Fantastic Flowers | Grocery Shopping | | |
| Science Activities, Vol. 2 | | | | "Growing" pp. 52–53 | |
| Supplies | We provide: NSK—tape. ASK —potting soil, small flower (peat) pots (3). You provide: pencil, dishes to put under pot to catch water, sheets of paper, water, cardboard, yardstick, Nature Diary, jar from <i>Growing Beans</i> . | | | | |
| Shopping/Planning List | For next week: Nature Diary. | | | | |

Other Notes

Day 1

How Flowers Grow | pp. 18–21

Activity Sheet Questions | #1–2

Day 2

How Flowers Grow | pp. 22–25

Activity Sheet Questions | #3–5

Optional: Do Together | Fantastic Flowers

Help your children do some additional research on exotic flowers that exhibit weird traits. Let their imaginations guide you. What fascinates them? The Venus Flytrap? The Rafflesia? Whatever it happens to be (it might be something you run across in your research, even), take some time to learn more about it. Find and print some pictures if you can. Then, let your children present a quick oral report about what they learned at dinner tonight.

Day 3

How Flowers Grow | pp. 26–29

Activity Sheet Questions | #6–7

Optional: Do Together | Grocery Shopping

It may sound too simple, but your kids can learn so much just by helping you grocery shop. Take them with you to the grocery store today, and let them point out examples of all they've learned about plants over the past couple of weeks. Watch them marvel as they see, touch, smell, and taste these plants that they've passed by many times, yet never have taken the time to examine closely. How many different types of plants can they find? What about fruits? Can they find any seeds? Enjoy turning a routine chore into quality learning time!

Day 4

Discover & Do Level K DVD | Tracks #72–75

Science Activities, Volume 2 | "Growing" pp. 52–53


Day 5


5-Day: Caterpillars and Butterflies | pp. 16–19 ■

Week 18 Activity Sheets



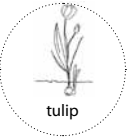

How Flowers Grow

1. How do animals help new plants grow? (pp. 18–19)


 1) (eat the seeds and pass them elsewhere to scatter them)

 2) (bury nuts and forget about them so they start to grow)

2. Circle the two plants below that don't use seeds to make new plants. (pp. 20–21)

 sunflower  spider plant  tulip  dandelion

3. Why do rainforest flowers need to be able to climb trees? (p. 22)

 because the trees above block out all of the rain


because the trees above block out all of the sunlight, so it's dark on the ground

because the flowers like to grow as tall as they can and climbing trees makes them even taller

Biology, Botany, and Physics | Week 18 | Student Activity Sheets 55

Week 18 Activity Sheets

4. How does hair on flowers help them live in harsh climates? (pp. 11, 24)




 (keeps them warm when it's cold; provides shade when it is hot and sunny)

5. What do desert plants do when there is no rain? (Put an X in the box for each one that is true.) (pp. 24–25)

they migrate they sing seeds wait for rain

flowers die leaves fall off store water in leaves

6. How do water plants survive in the water? Match the pictures with the actions. (pp. 26–27)

 flowers  leaves  roots

grow down to the soil float so insects can reach pollen float on the surface to get air

Student Activity Sheets | Week 18 | Biology, Botany, and Physics 56

Week 18 Activity Sheets

7. Do plants chew their food? (pp. 28–29) **Yes** **No**

If not, how are some plants able to eat insects?

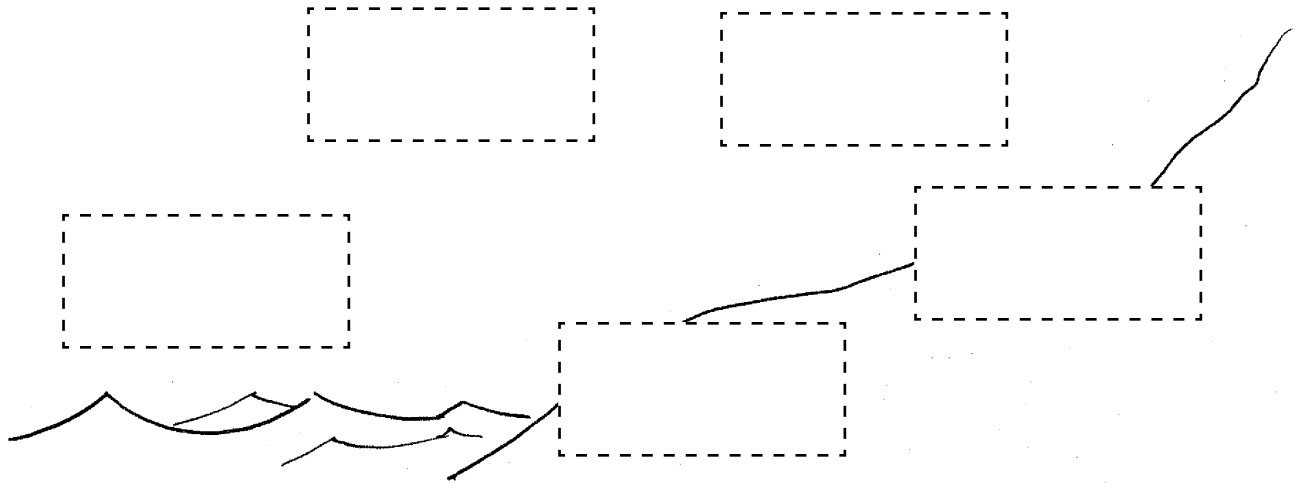
(plants trap an insect and juices cause the insect's body to rot slowly)

Biology, Botany, and Physics | Week 18 | Student Activity Sheets 57



Children's Encyclopedia

1. Describe the water cycle. (Please find Cut-Out #3.)
Then add arrows to show which way the water moves. (p. 14)



2. Draw a picture to record the Weather each day this week. (pp. 14–15)



Day 1



Day 2



Day 3



Day 4

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SCIENCE A **WEEK 36** **SCHEDULE**

| Date: | Day 1 <small>176</small> | Day 2 <small>177</small> | Day 3 <small>178</small> | Day 4 <small>179</small> | Day 5 <small>180</small> |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Isaac Newton and the Laws of Motion | chap. 1 | chap. 2 | chap. 3 | chap. 4 | |
| Activity Sheet Questions | #1 | #2 | #3–5 | #6 | |
| Optional: Do Together | Plan a Summer Field Trip | | | Finale | |

Other Notes

You're All Done!

Day 1

Isaac Newton and the Laws of Motion | chap. 1

Activity Sheet Questions | #1

Optional: Do Together | Plan a Summer Field Trip

Congratulations! It's the last week of Science A. Can you believe how much your children have learned this year? Take some time today to think about the variety of subjects they've covered this year. What did they enjoy the most? The least? How can you keep the ball rolling? Do a little research to find out what museums or science-related attractions are in your area. Plan to take your children to at least one of them this summer. Would they prefer to go to the local children's museum? Or the planetarium? Perhaps an archeological site instead? Do what you can to feed their curious minds. You never know when you might be raising the next great scientist!

Day 2

Isaac Newton and the Laws of Motion | chap. 2

Activity Sheet Questions | #2

Day 3

Isaac Newton and the Laws of Motion | chap. 3

Activity Sheet Questions | #3–5

Day 4

Isaac Newton and the Laws of Motion | chap. 4

Activity Sheet Questions | #6

Optional: Do Together | Finale

Take some time today to talk to your children about their science studies over the past year. What do they want to learn more about? Is there a special project they'd like to do this summer? Were there any subjects that they were unable to explore in depth because the season wasn't right, i.e., did they study something during the winter that needs to be observed in the summer? If so, make plans to study those things in greater depth this summer. Marvel at all they remember and count your blessings for all the wonderful moments you had together this year. ■

Week 36 Activity Sheets

Isaac Newton and the Laws of Motion

1. Name two things Newton loved to do as a boy. (chap. 1)

1) *(Possible: read, experiment, build machines)* _____

2) _____

2. What did Newton think kept the moon in orbit around the earth? (chap. 2)

gravity ropes solar wind engines


Was he right? *(Yes)* _____

3. Why does a rider fall off of a horse that stops quickly? (chap. 3)

because they didn't hold on tightly enough

because the horse is slippery

because an object will keep doing what it is doing until an outside force makes it change



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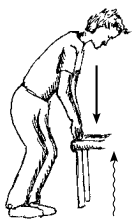
Biology, Botany, and Physics | Week 36 | Student Activity Sheets (11)

Week 36 Activity Sheets

4. Newton's third law says that forces always come in pairs. (chap. 3)

Draw a straight arrow to show the direction the boy is pushing on the table. →

Draw a squiggly arrow to show the direction the table is pushing back on the boy. ~~~~~→



5. Use the words in the box to complete the sentence. (chap. 3)

orbit fast enough in a circle gravity

Objects can stay in _____ *(orbit)* _____ because they are moving _____ *(fast enough)* _____ to want to travel in a straight line into space, but the force of _____ *(gravity)* _____ tugs on them to keep them moving _____ *(in a circle)* _____ around the earth.

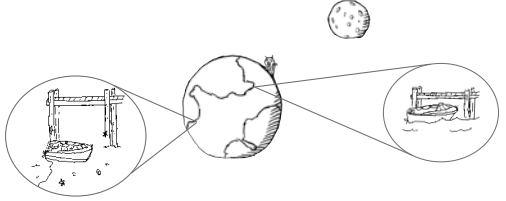
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(112) Student Activity Sheets | Week 36 | Biology, Botany, and Physics

Week 36 Activity Sheets

6. How does the moon's gravity affect Earth's tides? (chap. 4)

(As it orbits, the moon's gravity pulls on the earth, which causes the water in the oceans to bulge toward the moon. As the moon orbits the earth, the water bulges get pulled along, which causes the tides to rise and fall.)



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Biology, Botany, and Physics | Week 36 | Student Activity Sheets (113)



Isaac Newton and the Laws of Motion

1. Name two things Newton loved to do as a boy. (chap. 1)

1) _____

2) _____

2. What did Newton think kept the moon in orbit around the earth? (chap. 2)

gravity

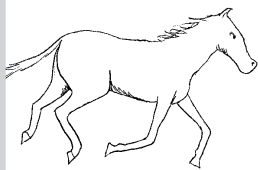
ropes

solar wind

engines

Was he right? _____

3. Why does a rider fall off of a horse that stops quickly? (chap. 3)



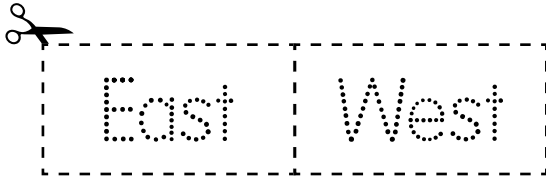
because they didn't hold on tightly enough

because the horse is slippery

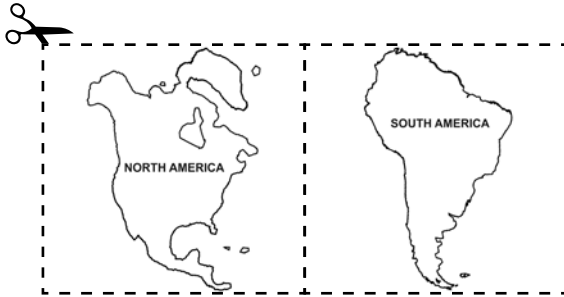
because an object will keep doing what it is doing until an outside force makes it change

Appendix 4: Cut-Out Sheets

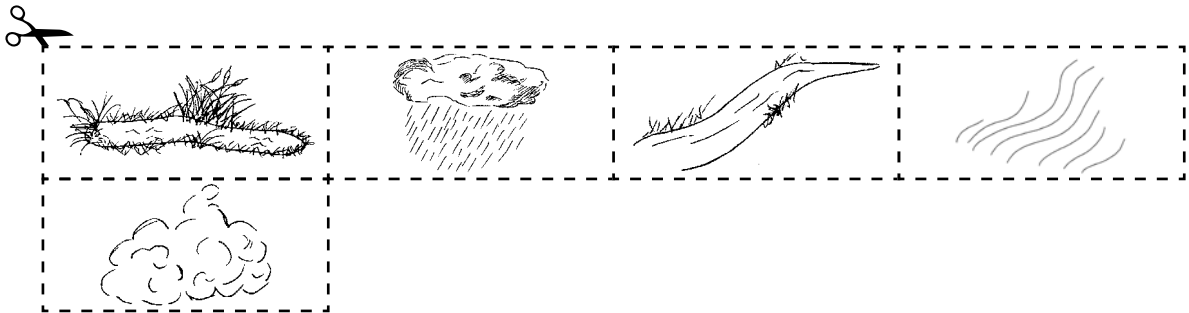
Cut-Out #1



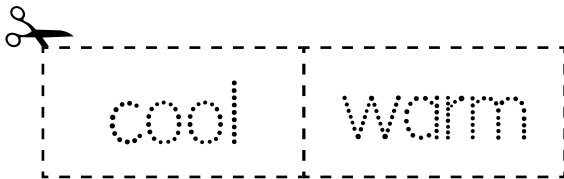
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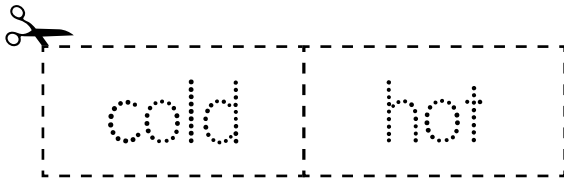
Cut-Out #3



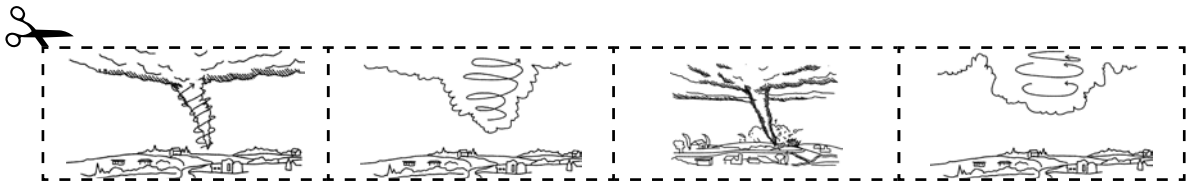
Cut-Out #4



Cut-Out #5



Cut-Out #6



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