

Exploring Creation with Earth Science – Errata File

This file contains the corrections for the **Textbook**. The printing for the Textbook may not be the same as for the Notebooking Journal. Corrections for the Notebooking Journal is in a separate file. (Posted 2024)

1st and 2nd printings – 2021:

Clarifications:

Page 28 – 2nd paragraph – change the last (6th) sentence to the following:

“Bigger objects tend to have more mass which means they have more stuff in them. Typically, the bigger something is in our solar system, the more gravity it has. This is important for the Earth.”

Page 34 – 2nd paragraph, 1st sentence – change to: “Planets rotate at different rates.”

Page 46 – 3rd paragraph, 1st sentence – add ‘into layers’ at the end so it reads: *Stratosphere* means spreading out into layers.

Page 71 – Activity 5.1, Step 2

- a. The end of the sentence should read: “...the map in your textbook to use as a visual guide.”
- b. no edit
- c. Sentence should read: “Outline what you see to match your textbook image.
- d. The end of the sentence should read: “...of your continent on your globe.”

Page 72 – 3rd paragraph – remove the following sentence and fragment:

1. ‘When the Earth was formed, the heaviest materials sank into the core and the lightest materials came to the top.’
2. ‘...consists of the lightest rock, so it...’ so the sentence reads: The outer part, the crust, floats on the mantle.

Page 99 – under Clay Soil section – remove the first sentence.

Page 103 – Ignore first sentence as it is duplicated from the bottom of page 102.

Pages 202-203 – **Activity 10.6 was replaced** with a new activity due to new laws prohibiting the release of balloons intentionally. See attached pages below.

Page 210 – Activity 10.8, Step 5:

1. for **L** – add ‘warm’ so it reads: low pressure **warm** front...
2. For **H** – add ‘cold’ so it reads: high pressure **cold** front...

Page 238 – first paragraph – Replace the 3rd full sentence, beginning with “The algae bloom uses up...” with the following sentences:

“The algae bloom uses the oxygen, leaving less for the plants and animals. When the algae die, bacteria involved in the decomposition of the algae can completely deplete the oxygen levels.”

Page 243 – Transpiration section, first two sentences – replace the word ‘suck’ with ‘pull’ two times.

1st and 2nd printings – 2021 continued:

Corrections:

Page 32 – Change ‘Etch A Sketch’ to ‘**Magna Doodle**’ 3 times.

Page 121 – two snowflakes should be 6-pointed.

Page 125 – 2nd paragraph, 1st sentence – remove the word ‘single’ So the sentence reads: A tsunami is a large wave.

Page 133 – in the top image, remove the word ‘artesian’ in front of aquifer.

Page 133 – Image of sun and earth models – add “Summer Solstice” above the Earth on the left and “Winter Solstice” above the Earth on the right.

Page 175 – the picture shown in the exosphere should be a satellite.

Page 227 – Glacier Food Web graphic – **Cross out** the arrow going from ‘Sun’s energy’ to ‘leaf litter’ and **add** an arrow going from ‘plants, seeds, and needles’ to ‘leaf litter.’

Page 278 – Lesson 2 -change ‘Etch A Sketch’ to ‘**Magna Doodle.**’

Page 300 – Page numbers were inadvertently left off for some of the terms in the Index as follows:

1. Creek.....131
2. Crop rotation.....274
3. Crust.....42-43
 - a. Cotinental.....68
 - b. Oceanic.....68, 137
4. Crystal.....78-81
5. Cumulonimbus cloud.....178
6. Cumulus cloud.....178
7. Currents.....72, 126, 182, 185, 201, 225
8. Cycles
 - a. Conservative.....244
 - b. Nonconservative.....244
9. Cyclone.....176
10. Cyclonic.....176

3rd printing – January 2022:

Clarifications:

Page 71 – Activity 5.1, Step 2

- e. The end of the sentence should read: "...the map in your textbook to use as a visual guide."
- f. no edit
- g. Sentence should read: "Outline what you see to match your textbook image.
- h. The end of the sentence should read: "...of your continent on your globe."

Page 103 – Ignore first sentence as it is duplicated from the bottom of page 102.

Pages 202-203 – **Activity 10.6 was replaced** with a new activity due to new laws prohibiting the release of balloons intentionally. See attached pages below.

Corrections:

Page 32 – Change 'Etch A Sketch' to '**Magna Doodle**' 3 times.

Page 121 – two snowflakes should be 6-pointed.

Page 175 – the picture shown in the exosphere should be a satellite.

Page 278 – Lesson 2 -change 'Etch A Sketch' to '**Magna Doodle.**'

4th printing – January 2023:

Clarifications:

Pages 202-203 – **Activity 10.6 was replaced** with a new activity due to new laws prohibiting the release of balloons intentionally. See attached pages below.

Corrections:

Page 121 – two snowflakes should be 6-pointed.

Page 175 – the picture shown in the exosphere should be a satellite.

5th printing – January 2024:

Clarifications:

Pages 202-203 – **Activity 10.6 was replaced** with a new activity due to new laws prohibiting the release of balloons intentionally. See attached pages below.

Corrections:

Page 175 – the picture shown in the exosphere should be a satellite.

Now that we know about the computer models, we need to get some data to feed into the model to match the right pattern. What information do we need to feed the model? We know this already. The computer models need temperature, air pressure, wind speed, humidity, dew point, and wind direction for many places around the world. How are we going to get our measurements all over the world? Let's takeoff and find out together.

Weather Balloons

One way to get data is through weather balloons. You might not be happy to watch a balloon sailing away, but meteorologists do this on purpose. **Weather balloons** are balloons with measuring instruments attached. These balloons are released from the ground and as they go up, they measure data at all different altitudes. The instrument carried by the balloon is a box called a **radiosonde**.

A radiosonde measures atmospheric pressure, air temperature, dew point, and wind speed as it rises and floats away. Of course, it also knows where it is all of the time so that we know where the data came from.

I'm sure you have watched one of your balloons sail away, getting farther and farther away. Did you ever get it back? Probably not because you don't know where the wind took it. Scientists don't know where their weather balloon is going either. Sometimes they end up 100 miles away. Scientists don't want to lose their expensive radiosondes, so they have both tracking devices and directions on them so that anyone who finds these devices will know how to return them. Maybe you'll find one someday.



Activity 10.6

Tracking Weather Balloons Around the World

All images are from sondehub.org and show ground stations (green dots), launch sites (grey dots), ascending balloons (white), and descending balloons (parachutes). You might be surprised to see the number of weather balloons in the atmosphere on any given day.

You will need:

- Image provided

You will do:

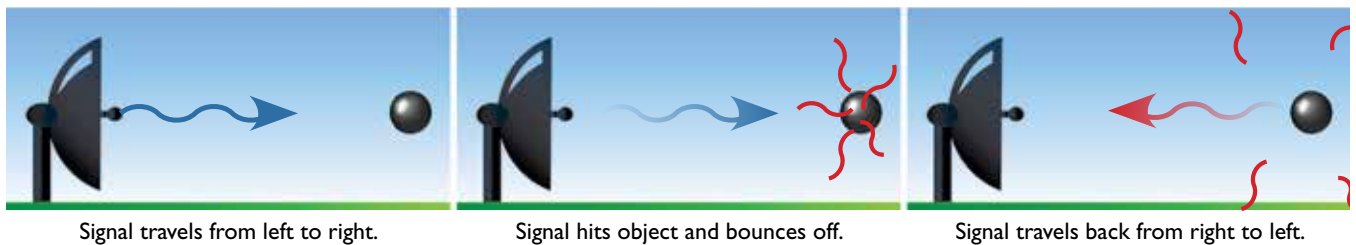
1. Look at the image provided on the next page and locate the weather balloon closest to where you live. Was the weather balloon on this day on its way up into the atmosphere (it will look like a white balloon) or is it descending (it will look like a parachute)?





Doppler Radar

I have mentioned Doppler radar before. Like all radar, **Doppler radar** sends out a signal and measures the reflection off something it hits. Doppler radar can tell the size of objects, like big rain drops, because larger objects return a stronger signal. It can also tell how far away something is, like rain, by how long it takes for the signal to be reflected back. Doppler radar can even tell how fast something is moving, like the wind, by analyzing the shape of its returning signal changes. You can see why Doppler radar is used so much for weather forecasting.



Signal travels from left to right.

Signal hits object and bounces off.

Signal travels back from right to left.

Satellites

Meteorologists are also lucky to have satellite data. **Satellites** orbiting the Earth can see huge areas at one time. In fact, weather satellites surround the Earth so that meteorologists can see what is happening everywhere at the same time. The National Oceanic and Atmospheric Association (NOAA) is always putting up new satellites to measure the weather, oceans, air, and ice. Many countries work together with NOAA to keep us all safe from extreme weather.