Exploring Creation with Physical Science 3rd Edition – Errata File

This file contains the corrections for the 1st Printing: March 2020, of the **Textbook**. The printing for the Textbook and Solutions and Tests Manual may not be the same. Corrections for the Solutions and Tests Manual are in a separate file. (Updated 6/18/2021)

Page 15 – Change first heading to: When Direct Observation Isn't Possible in the Scientific Method

Page 18 - Table 1.1 – change the title to: "Physical Quantities and Their Base Metric and English Units"

Page 23 – In the section titled "Temperature" – the first sentence should read: "In science, temperature is a measurement of how much energy a substance has."

   – Third line from the bottom - change "heat" to "temperature" to read "…using the Celsius scale for temperature measurements."

   – Figure 1.24 – Change all of the °C on the right hand side of the thermometer to °F.

Page 24 – Change the title of Table 1.3 to read "Common Metric Units and Prefixes"

   – Within Table 1.3 remove the * from the current ones shown (minute, hour, liter, milliliter, degrees Celsius) and add the * to only kilogram, meter, and second

   – Change the note under Table 1.3 to read: * SI units

Page 34 – At the end of Step 9 – change the last 2 sentences to read: "This gives you the number of swings per minute and is known as the frequency. Now find the period by dividing the frequency into 1 (period=1/frequency). Record the period in your data table."

Page 35 – In the Results section, change the first sentence of Step 1 to read: Find the average period for each mass…

   – In the first paragraph after the experiment, line 3 – change the words inside the ( ) to read: the time it takes for a full swing.

Page 60 – in the section Melting and Boiling Points, the first paragraph, sentence #2 should read: This temperature is called its melting point (at a given pressure).

   – Additionally, in the second paragraph, at the end of the first sentence, add (at a given pressure).

Page 63 – In the second paragraph under the section titled Volume and Density Changes – change the number "0.998.2071" to 0.9982071

Page 80 – In the second paragraph under A History of the Atom – Change Figure 2.2 to Figure 3.2.

Page 82 – the first paragraph under the section Dalton's Atomic Theory – change the 4th sentence from "The most likely explanation is…" to "One possible explanation is…"

Page 85 – Under the section Plum Pudding Model – the 5th sentence starts with the name "Thomson" Replace with "William Thomson (no relation)" and in the same sentence, change English 'desert' to English 'dessert'.

Page 88 – In the 6th line, 90 should be 90°.

 – Think About This – Change the first sentence to read: Later in Rutherford's life when he was asked about…

Page 91 – Add the following sentence to the end of the paragraph right before the definition of Mass number:
 "The mass number of an atom is also known as its atomic mass."

Page 93 – Think About This – Replace the sentences beginning with the 5th sentence through the end, with the following:
 "With most elements it's hard to notice many differences between isotopes. However, since all isotopes of an element have the same number of protons, they have the same chemical properties, but they have different physical properties. For example, heavy water has a slightly higher melting point, boiling point, and density than ordinary water."

Page 103 – In the 2nd to last sentence of the paragraph under Modern Periodic Table – change the word 'period' to 'periodic'. "Figure 3.26 shows a modern periodic table of elements."

Page 109 – In the 3rd paragraph, at the end of the 2nd sentence, add the following so the sentence reads:
 "…they emit different colored light, as their excited electrons return to the ground state."

Page 118 – In Figure 4.5, Fluorine is misspelled. It should be Fl<u>uo</u>rine.

Page 124 – Change the final sentence before 'think about this' to:
 "Other examples include potassium bromide (KBr) and lithium chloride (LiCl).

Page 126 – In Figure 4.12, change the N^+ to Na^+

Page 127- In the first paragraph, combine sentences 3 (Well atoms in these groups…) and 4 (Instead they tend…) to read:
 "Atoms in these groups tend to share electrons with other atoms."

Page 153 – In Table 5.1 Iodine row, Anion Name column: change the name from iodine to iodide.

Page 171 – In Figure 5.19, under Bonds Formed, the OH bond should be single: O-H

Page 178 – At the end of the second sentence, remove 'reactions' so that it ends at the word 'endothermic.' ..the vinegar-baking soda solutions were endothermic.

Page 179 – You Do Science – between the 3rd and 4th sentences, add this note:
 "(If you use a 2 liter bottle, you can double the ingredients for a more exciting result.)"

Page 181 – At the end of 5.2a, Change the $CaCl^2$ to $CaCl_2$.

Page 182 – # 5.7 – Change the 2nd sentence of the answer to:
"During the decomposition of water, the reverse reaction takes place. Water is broken down into its elements, according to the equation"

Page 184 – # 2b. – Change the answer option to calcium (I) chlorine (II).

Page 192 - Change the title of Figure 6.7 to Finding Displacement

Page 198 – multiple changes as shown below:
    1. Figure 6.11 – the green 200 m on the graph; change to 240 m
    2. In the paragraph below Figure 6.11; change 200 meters to 240 meters
    3. In the centered equation for speed (v); change 200 m to 240 m and change the answer from 5 to 6.

Page 210 – Problem A, Step 4: change 19.6 ft/s to m/s

Page 212 – Example 6.5, Step 1A: v_i = 0 m/s; change m/s to mi/h

Page 214 – In the first paragraph, the italicized portion, change to read "…the slope of a speed-time graph is the magnitude of acceleration."

Page 215 – In the second paragraph – second line – change the last word in the sentence "velocity" to "speed" to read "…graph indicates speed."

Page 220 – # 6.11 Step 1A – change v_1 to v_i and v_2 to v_f.
    – # 6.11 Step 4 – change the 6s in the denominator to 0.05 min

Page 221 – In # 5, after the comma, reverse 'it is' to be 'is it' so it reads as a question.

Page 222 – Study Guide question #10 – replace with the following:
    – A boat is traveling downstream on a quiet river with a speed of 8.0 m/s, and another boat is traveling with a speed of 10.0 m/s upstream. What is their relative speed?

Page 237 – In the 4th line on the page; change the first word "car" to "friend.

Page 250 – Problem D. Step 1; add F = ? in N to the list of unknowns.
    – Problem D. Steps 3 & 4; in the equation F= change the 1.0 m to m/s^2

Page 252 – Example 7.3A Steps 3&4 – This W stands for weight and therefore, it should be italicized and match the W in step 2.

Page 265 – *see end of edits below for the addition of the answer to the 2nd part of question 7.10.

Page 274 – Problem B. in the question, change 25 m/s to 24 m/s
    – Problem C. in the question, change 42 m/s to 48 m/s

Page 291 – Under the section Calculating Power, in the first sentence, add "of work" after amount so it reads "…simply by dividing the amount of work done by…"

Page 292 – In the first sentence on the page...The SI unit of power is the watt (W). The capital W inside the parentheses should be the same font as the W in Example 8.4 A. Step 1: P = ? in W. This W is a symbol, with no flourishes on the W.

Page 294 – Procedure Part A #6 – change to:
"Calculate the force (in this case it is the weight, use W = mg, where g = 9.8 m/s^2), work, and power (in watts and horsepower) that you produced as you lifted the 1 lb mass and record it in the data table."

Page 295 – Procedure Part B #4 – change to:
"Calculate the force (your weight, use W = mg, where g = 9.8 m/s^2), work, and power (in watts and horsepower) that you produced as you lifted your body up the stairs and record it in the data table."

Page 299 – Example 8.5A – Line 2 and line 10, change "incline" to "inclined."

Page 306 – 3 edits:
1. 8.10 Step 1: P = ? in W. This W is the symbol for watt and should also be the same as above on page 292.

2. 8.10 Step 2: P = *W*/t. This W represents work so it should be italicized.

3. 8.10 Step 3&4: 18.75 W – this W is the symbol for watt and should be the same as above on page 292.

Page 310 – #16 – change '20.0 km/s' to '20.0 m/s' and remove the hint at the end of the question.

– #17 – for clarification, change the beginning of the first sentence to: "Suppose 200.0 kg of…" and the beginning of the 2nd sentence to "How much gravitational potential energy…"

Page 351 – The last paragraph is missing a sentence. Between sentences 3 and 4, insert: "Yet the sun emits so many electromagnetic waves that the number hitting the Earth is still a great number." So beginning with sentence 3, it will then read:

If electromagnetic waves travel far, however, the energy spreads out over a larger distance. Yet the sun emits so many electromagnetic waves that the number hitting the Earth is still a great number. That is why the sunlight is still so bright even after traveling all the way from the sun.

Page 379 – OYO 10.8 – the A. and B. should be reversed so B. is on the top.

Page 398 – In point #3. Change the following:
– In line 4, (1/22… should be 1/2^2…)
– In line 6 the 22 should be 2^2
– We have removed the Galileo quote at the bottom of the page.

Page 428 – OYO #11.5 image – the red arrow head pointing up to the line for the positive side should point down.
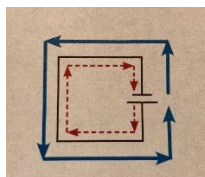
Page 438 – The white line for 'outer core' should point to the orange section surrounding the inner core.

Page 445 – On line 2 of the page, change 12.10 to 12.9.

Page 454 – In the 3rd paragraph, change the 1st sentence to read: "Carbon dioxide in the air mixes with water as raindrops fall."
        – Also in the 3rd paragraph, at the end of the 3rd sentence, change the "a lot" to "all the time."

Page 471 – In Step 12, change the number 5 to 11.

Page 499 – In the third section of Infographic 14.2, change the 'Rings' title in the brown box, from Cyclobutane C_4H_{10} to Cyclobutane **C_4H_8**.

Pages 508 and 540 – Experiment 14.1 – change 100 mg vitamin C pill to 1000 mg vitamin C pill.

Page 516 – At the end of Study Guide question #9, it should read: "…such as the one shown in Figure 14.7."

Page 536 – The You Do Science listed under Module 3 should be moved to the Module 4 list.

Page 537 – Under Module 6, remove the list for Experiment 6.2.

*Page 265:

7.10 To answer the second part of the question, we need to determine the total force on the block. Since we know the mass and acceleration, we can calculate the total force with Equation 7.2.

   Step 1   List the knowns and unknown and check units.

         m = 10 kg

         a = 1.5 m/s² east

         F = ? in N

   Step 2   Write the equation (7.2).

         $F = m \times a$

   Steps 3 & 4   Add knowns from step 1 to equation. Double check units and solve.

         F = (10 kg) × (1.5 m/s²) = 15 N

   Now remember, this is the total force to which the block is subjected. It is the result of *two* forces: the force applied by the child (*Fa*) and the frictional force (*Ff*). Since friction opposes motion, the total

force is the difference between the two. Also, since the block is moving, the frictional force will be the kinetic frictional force which is given in the problem.

Step 1   List the knowns and unknown and check units.

$F = 15$ N

$F_{kf} = 20$ N

$F_a = ?$

Step 2   Write the equation and rearrange for the unknown.

$F = F_a - F_{kf}$ so $F_a = F + F_{kf}$

Steps 3 & 4   Add knowns from step 1 to equation. Double check units and solve.

$F_a = 15$ N + 20 N = 35 N

So, the child is applying a force with a strength of 35 Newtons. Its direction is east since that's the direction the child wants the block to move. Thus, the actual force used is 35 N east.