For my lesson, I wanted the students to explore more non-standard units of time. I wanted them to experience these non-standard units beyond class discussion/videos/etc. I have created a pre-requisite lesson that allows students to create human sundials and observe the passage of time throughout a day using that tool. They later use these measurements for Lesson 4. The first lesson plan is the pre-requisite plan. Lesson 4 (which utilizes the pre-requisite plan information) begins on page 9.

Thank you!

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| **Lesson Title:** Pre-Requisite lesson for Lesson 4  **Course:** Grade 3  **Designer:** Jordyn Neufeld |
| **Learning Outcomes/Intentions** |
| **Formal Unit Outcome(s):**  **Outcome SS3.1:** Demonstrate understanding of the passage of time including:   * Relating common activities to standard and non-standard units * Describing relationships between units * Solving situational questions   **Indicators:**   1. Select and use a personally relevant non-standard unit of measure for the passage of time (such as television shows, a pendulum swing, sunrise, sundown, moon cycles, and hunger patterns) and explain the choice. 2. Describe ways in which the measurement of time is cyclical. |
| **Objective:**  Describe the passage of time using a non-standard measurement of time, e.g., sundial. Describe how one may use the shadows caused by the sun shifting throughout the day to indicate the passage of time. |
| **Mathematical Processes:**  **Connections [CN]:** Students will be connecting their prior knowledge of time-keeping devices and standard units of time to the human sundial activity – which introduces a tool used to measure non-standard units of time.  **Visualization [V]:** Students will be able to create a sundial using their bodies while visually representing the passage of time/suns movement throughout a school day. They will measure the traced outline of their shadow and relate those findings to the mathematics concept being discussed – time!  **Reasoning [R]:** Students will be using inductive reasoning as they record results of the human sundial activity throughout the day. At the end of the day they will analyze their observations and answer questions based on their conclusions. |
| **Essential Questions:**  How can I use my shadow to visually represent the passage of time? How does this measurement of time relate to standard units discussed in class? |
| **First Nations Content** |
| N/A |
| **Assessment Evidence** |
| **Formative Assessments (Assessment for Learning):**  Assess student on previous knowledge from the last lesson – Questions regarding non-standard units of time described last class.  Worksheet (ATTACHED) relating to the passage of time measured by the human sundial activity done throughout the day. This will be a tool for the summative assessment during the next lesson.  Data sheet (ATTACHED) – though measurement with meter sticks is not the focus of the lesson, this may help us identify where the students are at with measuring physical distances and could guide our future lessons within this topic. |
| **Summative Assessments (Assessment of Learning):**  N/A |
| **Materials** |
| * Chalk * Compass * Paper * Pencils * Worksheet (ATTACHED) (for after the activity) * Data sheet (ATTACHED) * <https://www.britannica.com/technology/sundial> - for teacher information on the sundial (history, etc.) * <https://www.scholastic.com/teachers/blog-posts/genia-connell/interactive-science-human-sundial/> - lesson inspiration * Meter sticks (1 per group of 2 students) * <https://www.youtube.com/watch?v=1SN1BOpLZAs> Video for engage portion of lesson |
| **Learning Plan** |
| **Learning Experiences & Instruction:**  **TEACHER PREPERATION PRIOR TO CLASS:**  Prior to the day this activity will take place, the teacher must ensure that the day chosen is clear of clouds – pick a beautiful sunny day!! Identify a large area of pavement on the school grounds that can be accessed throughout the day. Start the lesson in the morning to ensure that you are able to get as many measurements throughout the day as possible. Create your own sundial – beginning when the students have yet to arrive at school if you are able to.  **ENGAGE (10 minutes) – PREFERABLY COMPLETE THIS ACTIVITY AS EARLY AS POSSIBLE IN THE DAY:**  Have students seated in their desks with their outdoor gear nearby and accessible. Last class we talked about standard units of time, like hours, minutes, days, weeks, years and so on. We also described some non-standard units of time. Some we use everyday (e.g., hunger patterns), others we don’t typically use (e.g., measuring time in TV shows). Ask students:   * What are some examples of non-standard units of time we explored last class? (e.g., TV shows=30 minutes, brushing teeth=3 mintues, green onion=one month, etc.) * Have you thought of any more examples of non-standard units of time? (e.g., observing our shadow throughout the day) * Can you think of tools we would use to measure non-standard units of time? (e.g., sundial)   Today we are going to discuss one of the first tools used to measure time – a sundial! This tool dates back to 3500 BCE, and was created by the ancient Egyptians. **\*DISPLAY PICTURE OF SUNDIAL ON SCREEN (Picture below)\***  \*Point to flat surface of sundial picture\* This is called a dial plate and can be made out of many materials (e.g., stone, wood, metal, etc.). The plate contains line, hour lines, indicating the time of day. The object sticking up in the middle \*point to it\* is called a gnomon stick. As the sun moves throughout the day, the gnomon stick’s shadow moves around the dial plate indicating the passage of time!  Play video that describes how we can use shadows to observe and understand the passage of time (5 minutes): <https://www.youtube.com/watch?v=1SN1BOpLZAs>  Once video is over, ask students:   * What is a shadow? (the dark patch that is created by solids blocking the sun from that area) * What direction does the sun rise in? (east) * What direction does the sun set in? (west)   Today we are going to create a human sundial!! Don’t worry, we won’t have to stand in one place all day – but we are going to be using the shadows our bodies create throughout the day!  Everyone needs to get up, put on their outside gear and line up at the door.  **BRING STUDENTS TO AN INDICATED OUTDOOR AREA WITHIN SCHOOL PROPERTY. IT MUST BE A LARGE FLAT PAVED SURFACE WHERE ALL STUDENTS ARE ABLE TO CREATE SUNDIALS WITH ENOUGH SPACE (all students must be able to stretch their arms out all around them without touching anybody leaving extra space ahead of them! This will be better understood when students can see how much space they need based on their shadow. Ensure that you have all the things you will need in a backpack/cart to take with you – chalk, compasses, data sheets (attached), pencils and meter sticks. Pair students up as they line up at the door – these will be their partner throughout the day.**  **EXPLORE (20 minutes):**  Have students find personal space among the paved area of the school grounds. They will need to be aware of personal space and ensure that their shadow is able to fully extend without it being interrupted by a peer. Once students are in their personal spot, get them to draw an x under their feet with chalk – this is where they will be standing to measure their shadow throughout the day. Have students indicate which direction is north, east, west and south using a compass – this may be challenging so have the directions already prepared to help students or share with the class.  Have one partner stand on their x facing north. They must stay really still while their partner traces around their shadow with chalk on the pavement. Once the shadow has been fully traced, write the time it was measured beside it in chalk. Then the students will switch roles. Once both students have traced each others shadows, they must individually measure their own shadow. The students will measure the length/height of their shadow and write it on the data sheet.  Once this is complete the students will return to class.  **THE STUDENTS WILL RETURN TO THEIR “SUNDIAL” AT 10AM, 12PM, 1PM AND 2:15PM AND RECORD THEIR OBSERVATIONS. The tracing and recording observations should only take around 10 minutes after the first time is complete.**  **Closure (20 minutes):**  Once the students have returned from their final observation and are seated, discuss the activity as a class. Ask students:   * Why do you think our shadows moved throughout the day? (as our bodies stay in the same place for our observations, the sun moves around us creating a different shadow) * What do you think will happen if we kept going back to our sundial until sundown? (shadow continues to move and lengthen) In this sense time can be seen as cyclical – the sun moves in a clockwise direction throughout the day and continues into the next day. Some things may cause a change in the shadow, such as seasons. However, the cycle still continues day after day regardless of changes in environment. * What have you observed about the length of your shadow? (get students to reference their data sheets from the day)   Hand out the worksheet (ATTACHED) and explain to the students that they will be using their observations and measurements to answer the questions on the sheet that relate the data found in the activity to standard units of time. If students finish, they may chat with their peers about what they found throughout their observations and how they relate to standard units of time. Ask students to hand in their sheets before the day is over – these will not be used for summative assessment, but will be used for a tool for the summative assessment in lesson 4. The educator will go over these sheets to ensure that students have measured correctly as well as monitoring the students closely throughout the activity to ensure accurate data.  Before the class is over, tell students that the next lesson we are going to be doing some more fun time measurement activities and to remind them that they need to have their personal planner templates from lesson 3 filled out/ready for the next class. |
| **Reflection** |
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Human Sundial Data Sheet:

Mathematician (name):

Date:

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| --- |
| **8:30 am:**  **My shadow was \_\_\_\_\_\_\_\_cm long, \_\_\_\_\_\_\_\_\_inches long, \_\_\_\_\_\_\_\_\_feet long, \_\_\_\_\_\_\_\_meters long.**  **My shadow is pointing the direction of: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

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| **10 am:**  **My shadow was \_\_\_\_\_\_\_\_cm long, \_\_\_\_\_\_\_\_\_inches long, \_\_\_\_\_\_\_\_\_feet long, \_\_\_\_\_\_\_\_meters long.**  **My shadow now is \_\_\_\_\_\_\_ inches away from the 8:30am shadow outline.**  **My shadow is pointing the direction of:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

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| **12 pm:**  **My shadow was \_\_\_\_\_\_\_\_cm long, \_\_\_\_\_\_\_\_\_inches long, \_\_\_\_\_\_\_\_\_feet long, \_\_\_\_\_\_\_\_meters long.**  **My shadow now is \_\_\_\_\_\_\_ inches away from the 10am shadow outline.**  **My shadow is pointing the direction of:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

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| **1 pm:**  **My shadow was \_\_\_\_\_\_\_\_cm long, \_\_\_\_\_\_\_\_\_inches long, \_\_\_\_\_\_\_\_\_feet long, \_\_\_\_\_\_\_\_meters long.**  **My shadow now is \_\_\_\_\_\_\_ inches away from the 12pm shadow outline.**  **My shadow is pointing the direction of:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

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| **2:15 pm:**  **My shadow was \_\_\_\_\_\_\_\_cm long, \_\_\_\_\_\_\_\_\_inches long, \_\_\_\_\_\_\_\_\_feet long, \_\_\_\_\_\_\_\_meters long.**  **My shadow now is \_\_\_\_\_\_\_ inches away from the 1pm shadow outline.**  **My shadow is pointing the direction of:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

**Human Sundial Worksheet:**

**Mathematician (name):**

**Date:**

Please use your measurements you collected on your data sheet throughout the day to help you answer the following questions relating to standard units of time! Make sure to discuss with your peers about what you find and raise your hand if you have any questions!

1. **What was the distance between:**
2. Your 8:30 am shadow and your 12 pm shadow?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Your 10 am shadow and your 12 pm shadow?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Your 1 pm shadow and your 2:15 pm shadow?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Your 8:30 am shadow and your 2:15 pm shadow?
2. **How many hours did it take for you to notice that your shadow had moved a foot (12 inches)?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **What direction was your shadow pointing towards in your first measurement?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
2. **What direction was your shadown pointing towards in your last measurement? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
3. **At what time did you notice that the direction of the shadow switched directions from the first measurement?**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Lesson Title:** Just taking it one day at a time..  **Course:** Grade 3  **Designer:** Jordyn Neufeld |
| **Learning Outcomes/Intentions** |
| **Formal Unit Outcome(s):**  **Outcome SS3.1:** Demonstrate understanding of the passage of time including:   * Relating common activities to standard and non-standard units * Describing relationships between units * Solving situational questions   **Indicators:**   1. Observe and describe activities relevant to self, family and community that would involve the measurement of time. 2. Select and use a personally relevant non-standard unit of measure for the passage of time (such as television shows, a pendulum swing, sunrise, sundown, moon cycles, and hunger patterns) and explain the choice. 3. Select and justify personal referents for minutes and hours. |
| **Objective:**  Describe how activities relevant to self and family relate to standard and non-standard units of time. Demonstrate awareness of how different non-standard measurements of time can be used to describe activities of the same length as one another (e.g., hockey practice was one hour and reading was one hour, two different non-standard units of time could accurately describe their lengths). |
| **Mathematical Processes:**  **Communication [C]:** Students will communicate with their partner when reasoning about what activities may fit into specific time lengths – listen to each other’s strategies and thought processes. They will communicate with their peers as they fill in their “A Day in the Life of…” booklets about the non-standard unit choices they are making and why. They will also communicate with the teacher as the educator observes and asks questions to the students during the activity. Finally, they will communicate as a class when discussing the diverse ways the students used to describe activities that they individually participate in.  **Connections [CN]:** Students will connect their prior knowledge of standard units of time in relation to how they organize their days to the non-standard units of time that have been explored over the past few lessons (lesson 3, pre-requisite activity to lesson 4, and lesson 4). They will be relating the mathematical concepts discussed in class to their real lives.  **Reasoning [R]:** Students will be using deductive reasoning when trying to determine what activity will take a specific amount of time based on the knowledge they have learnt throughout the stopwatch activity. Then testing these reasonings by record results and analyze those observations (inductive reasoning). They will deductive reasoning when deciding which non-standard measurement of time accurately represents an activity of a specific time length throughout the “A Day in the Life of…” activity (Explore section of lesson). |
| **Essential Questions:**  How do standard and non-standard units of time relate to one another? How can I relate the activities I do in a day that are typically measured in standard units to non-standard units of time? How many ways can I describe a specific standard unit length of time with various non-standard examples (e.g., 1 hour can be described as two TV shows, etc.)? |
| **First Nations Content** |
| N/A |
| **Assessment Evidence** |
| **Formative Assessments (Assessment for Learning):**  Asses students on previous knowledge from the last lesson – questions about non-standard and standard units of time and examples of each.  Observe students as they complete all tasks throughout the lesson (engage, explore and closure). Listen for reasoning and prompt students with questions that reflect on their strategies and thought process behind decisions.  Ensure that all students have accurately filled in their stopwatch data sheet – this will be gone over as a whole class. Use questions to reflect on the students strategies. |
| **Summative Assessments (Assessment of Learning):**  A Day in the Life… Booklet (ATTACHED) – Rubric is provided. |
| **Materials** |
| * Completed personal schedules from lesson 3 (the template is attached below for reference) * Anchor sheet of non-standard unit examples from lesson 3 (examples listed in in learning plan) * Sun dial Data sheet from the pre-requisite lesson above * Stopwatch Data sheet for engage portion of lesson (ATTACHED) * Stopwatches (1 for every pair of students) * Pencils * Erasers * Coloring supplies (and stickers – optional) * Day in the life booklet (ATTACHED)   + Sun image on front page: <https://www.google.com/url?sa=i&url=https%3A%2F%2Fbedfordny.gov%2Fsunshine-sun-clip-art-with-transparent-background-free-free-clipart-sun-2361_2358-3%2F&psig=AOvVaw2khQZgLfkPNYWkD5naeg8n&ust=1606100346663000&source=images&cd=vfe&ved=0CA0QjhxqFwoTCJj1-paUle0CFQAAAAAdAAAAABAD>   + Moon image on first page: <https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.pngkit.com%2Fbigpic%2Fu2r5o0t4u2e6i1i1%2F&psig=AOvVaw1b7oW3_dpwt2k717lrv7FP&ust=1606100472108000&source=images&cd=vfe&ved=0CA0QjhxqFwoTCLDMyNSUle0CFQAAAAAdAAAAABAK> |
| **Learning Plan** |
| **Learning Experiences & Instruction:**  **ENGAGE (20 minutes):**  Have students seated at their desks and ask students to bring out their personal schedule templates they have been filling out over the past week and their data sheets from the sundial activity they had completed prior to this class. Ask students:   * What was the tool we created that measured a non-standard unit of time? What did we use to observe the passage of time? (drawing our shadows throughout the day and tracking their movement) * What are other ways we can measure time?   This class we are going to gather some non-standard measurements of time before we get started on our daily planner activity! We are going to use stop watches and time ourselves doing tasks outlined on our scavenger hunt worksheet (ATTACHED). The worksheet has 3 different activities identified and 3 different time lengths (1 minute, 3 minutes, 10 minutes). You and a partner will look at the activities and discuss which activities seem to align with each time frame – make sure to discuss your reasoning. You will need to complete **one** activity for each time frame. Once you have decided which activity represents each time frame, one of you will complete the task identified while your partner times you to check if you’re hypothesis was correct. If you were correct, write the activity in the indicated time slot and move on to the next activity. Please remember that the time does not have to be exact, just close. Once those are finished, return to your desk to show me you are ready to move on! I will give you a 5 minute warning to wrap up! Make sure to partner students up while handing out the supplies (worksheet and stop-watches).  If stop-watches are new to the students, teach them to press the button when they start an activity and again when the activity is complete to see how long it took. Make sure to demonstrate with the equipment you have available.  While students complete the task the educator will ask students:   * What strategies did you use to connect [activity] with that length of time?   **EXPLORE (35 minutes):**  We now have knowledge on standard units of time, examples from lesson 3 of non-standard measurements of time, examples of time measurement gathered from the sundial activity and activities that relate to smaller measurements of time that we gathered today! Instruct the students to gather the sundial and stop-watch data sheets and their filled in personal schedule templates from lesson 3 as they will be needed to complete the activity today. At this time, hang up the list of non-standard measurements of time created in lesson three. The examples may include the following:   * One TV show is often 30 minutes long – 2 TV shows = 1 hour * It takes about 3 minutes to brush our teeth * It takes one year to go from one birthday to the next * Green onions takes about one month to. Grow * It takes about 80-100 years for a tree to fully grow * It takes about 4 months for seasons to change * One second is equivalent to one blink.   Hand out the “Day in the Life of …” booklets (ATTACHED). Explain to students that the first page they will need to write their name and date.  The second page acts as a “Index,” and will have places for students to list three activities and the length they took in standard and non-standard units. Ask them to look at the section that asked them *“What are three things I did after school/in the evening/on the weekend and how long did they take me?”* The students will choose 3 activities from any of the days that all took different amounts of time. They will use the example list hung up at the front of the classroom and their data sheets to complete the non-standard unit section.  The next three pages will be blank with a line at the bottom. They will write the activity on the line and draw a picture of the activity they chose. The students must answer the questions, then draw, next they can color and finally they can decorate the front page. The coloring and decorating the book can be done in spare time throughout the day as the focus for this period is the students relating activities they documented they have done to standard and non-standard units of time. The goal for this class is to complete the questions and the sketches of the three activities. There will be more time to complete this assignment before assessment.  Before starting the activity, share some examples with the students. For example, my three activities could be that I cleaned for 2 hours, played with my cats for an hour and watched one show. The non-standard units that could relate to these activities could be the following:   * Cleaning *(activity)* for 2 hours *(standard measurement of time)* = the length of time it took my shadow to move one foot (12 inches) using my data from the sundial activity *(non-standard measurement of time)* * Playing with my cats for 1 hour = the length of two shows (1 show=30 minutes x 2 = 1 hour) * Watch one show for half an hour = the length it took to write in my journal (from stopwatch activity at beginning of lesson) three times (10 minutes x 3 = 30 minutes)   Ask students if they have any questions, if not they may get started! Encourage students to chat amongst their peers to see the activities of the class and what non-standard measurements they are choosing to describe the activities. As the students work, the educator will observe the students and ask:   * What non-standard measurement of time are you using to describe your activity? Why? * Can you think of a different non-standard measurement you can describe the same activity with? * Have you thought of other non-standard measurements or tools to measure them throughout this series of lessons? * And so on..   **CLOSURE (5 minutes):**  As class comes to an end, gather all the booklets from students, but have them nearby for students to continue working on during free periods, etc. Collect the stopwatch data sheets from students for formative assessment – though could be used for summative assessment as there is an answer key provided. Ask students:   * What activities did you choose to describe and visually represent in your “Day in the Life” book? After some students have shared their activities, reflect on the differences and similarities. Take note of the interests noted within this discussion – this may indicate topics you will want to explore within further lessons throughout the year. * What are some of the non-standard units did you use to describe the time length of your activity? Why did you choose that specific unit? What was your reasoning? After hearing a few answers, ask students if there are other units that could describe a specific activity, or if other students used different units to measure an activity with the same length of time. Ask students to discuss their reasoning behind their selection and explore the reasoning that the students used when choosing different measurements for similar amounts of time.   Thank your students for their hard work and participation and dismiss from learning period. |
| **Reflection** |
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**Personal Schedule Template (from lesson 3):**

**Day 1:**

I woke up at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I ate breakfast at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The sunrise happened at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I went to school at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are three things I did after school/in the evening and how long did they take me?

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I ate supper at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The sunset happened at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I went to bed at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did you feel about today? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Day 2:**

I woke up at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I ate breakfast at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The sunrise happened at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I went to school at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are three things I did after school/in the evening and how long did they take me?

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I ate supper at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The sunset happened at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I went to bed at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did you feel about today? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Day 3:**

I woke up at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I ate breakfast at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The sunrise happened at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I went to school at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are three things I did after school/in the evening and how long did they take me?

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I ate supper at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The sunset happened at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I went to bed at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did you feel about today? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Stopwatch Data Sheet:**

**Mathematicians (names of both partners):**



**Date:**

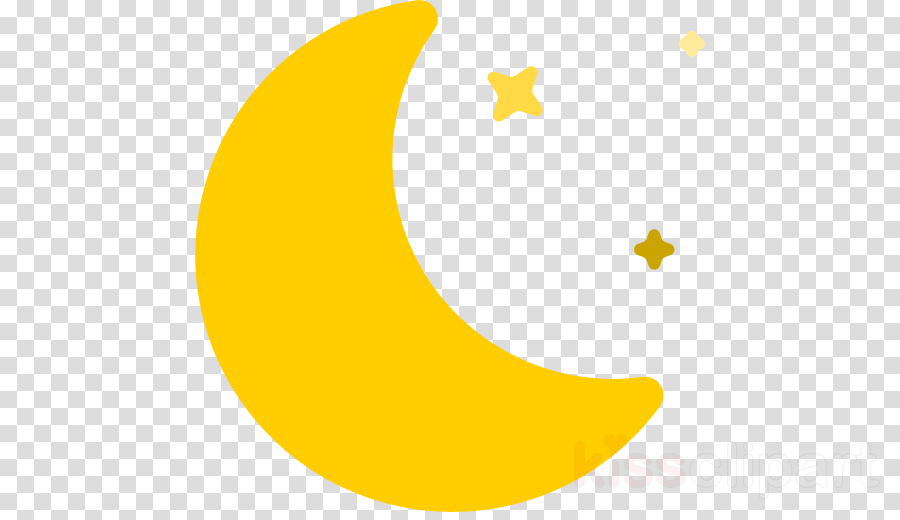
**Please look at the following activities and identify which of the 3 would take 1 minute, 3 minutes and 10 minutes long. Once you have organized all the activities into the categories you believe to be correct, test you hypothesis! One partner will be the time-keeper – they will start the stop watch when the other partner begins a task and stop it as soon as the activity is complete. Once you have found the correct time length of an activity and have tested it, write the activity next to the time length. Add a smiley face (e.g., ☺) next to the time lengths that you had guessed correctly! Have fun!!**

|  |
| --- |
| **Activities:**   * Sing happy birthday * Write in journal about three good things that happened today * Walk to *[the water fountain, the bathroom, etc. (somewhere that is close to the classroom, but about a three-minute round trip)]* and back |

|  |  |
| --- | --- |
| **Time Length:** | **Activity:** |
| 1 minute: |  |
| 3 minutes: |  |
| 10 minutes: |  |

**Stopwatch Data Sheet Answer Key:**

|  |  |
| --- | --- |
| **Time Length:** | **Activity:** |
| 1 minute: | Sing happy birthday |
| 3 minutes: | Walk to somewhere in the school that is approximately a 3 minute round trip |
| 10 minutes: | Write in journal |





A Day in the Life of

\_\_\_\_\_\_\_\_  
Name

Activity Index:

**Activity #1:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Length of time using:**

**Standard units:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Non-Standard units:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Activity #2:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Length of time using:**

**Standard units:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Non-Standard units:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Activity #2:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Length of time using:**

**Standard units:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Non-Standard units:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1.

Activity #1:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.

Activity #2:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.

Activity #3:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.

|  |  |  |  |
| --- | --- | --- | --- |
| **Category:** | **3** | **2** | **1** |
| **Completion:** | Student has wrote their name on the front page, filled in all questions on the index page and visually represented the activities on pages 2-4. | Student wrote their name and filled in most questions. Student visually represented some of the activities. | Student did not complete the assignment or had completed very little. E.g., 1 question, 1 activity, etc. |
| **Accuracy:** | The student accurately matched all activities with the correct length of time using both standard and non-standard units. | The student accurately matched half of the activities with the correct length of time (standard and non-standard units) | The student matched none or less than half of activities with the correct length of time (standard and non-standard units) |
| **Creativeness:** | Student visually represented the activities they have selected accurately and without using words | Student visually represented 2/3 activities, used some words. | Student visually represented one of the activities, used mostly words. |
| **Total:** |  |  | **/9** |

Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_