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| **Lesson Content** |
| **What Standards (national or state) relate to this lesson?**(You should include ALL applicable standards. Rarely do teachers use just one: they’d never get through them all.) | SC.1.N.1.3 Keep records as appropriate – such as pictorial and written records – of investigations conducted. SC.1.N.1.1 Raise questions about the natural world, investigate them in teams through free exploration, and generate appropriate explanations based on those explorations.  |
| **Essential Understanding**(What is the big idea or essential question that you want students to come away with? In other words, what, aside from the standard and our objective, will students understand when they finish this lesson?)  | Students will understand what a shadow is, what causes a shadow, and how it relates to the natural world. How does the shadow change throughout the day?  |
| **Objectives- What are you teaching?**(Student-centered: What will students know and be able to do after this lesson? Include the ABCD’s of objectives: action, behavior, condition, and degree of mastery, i.e., "C: Given a sentence written in the past or present tense, A: the student B: will be able to re-write the sentence in future tense D: with no errors in tense or tense contradiction (i.e., I will see her yesterday.)." Note: Degree of mastery does **not** need to be a percentage.) | Given the data collected and observations made during the investigation, students will be able to discuss how shadows move throughout the day.  |
| **Rationale**Address the following questions:* Why are you teaching this objective?
* Where does this lesson fit within a larger plan?
* Why are you teaching it this way?
* Why is it important for students to learn this concept?
 | I am teaching this lesson so that the students are able to gain background knowledge so that they may investigate and explore the natural world around them. The lesson fits into the larger plan because students will be learning about the sun (which causes shadows) and stars in an upcoming unit. It also provides them with experience related to the scientific method/process.  |
| **Evaluation Plan- How will you know students have mastered your objectives?**Address the following: * What formative evidence will you use to document student learning during this lesson?
* What summative evidence will you collect, either during this lesson or in upcoming lessons?
 | Formative evidence: Teacher made observations of student participation during turn and talk, class discussion, or answering questions. Shadow investigation worksheets Summative evidence: Exit ticket: How did the shadow move throughout the day? |
| **What Content Knowledge is necessary for a teacher to teach this material?** | The teacher must have an understanding of what a shadow is, and what causes a shadow in order to teach this material. The teacher must also know that the sun moves throughout the day, which causes the shadow to change position and length.  |
| **What background knowledge is necessary for a student to successfully meet these objectives?** * How will you ensure students’ have this previous knowledge?
* Who are your learners?
* What do you know about them?
* What do you know about their readiness for this content?
 | The students must know sources of light (the sun, lamp, phones, etc.). I will ensure that they have this knowledge through engaging their past experiences with light sources. I know that they are ready for this content because it is reflected through the standards and developmentally appropriate. The students will also need the knowledge that was taught in the previous lesson. In the previous lesson, students learned what a shadow is and what causes a shadow.  |
| **What misconceptions might students have about this content?** | Students may have the misconception that the shadow moves regardless of the position of the source of light. Students may also believe that shadows are only visible outside (only caused by sunlight).  |
| **Lesson Implementation**  |
| **Teaching Methods**(What teaching method(s) will you use during this lesson? Examples include guided release, 5 Es, direct instruction, lecture, demonstration, partner word, etc.) | In order to meet the needs of my learners, I am implementing various teaching methods so that all students are able to comprehend the content.I am implementing the Kagan style of seating (and intern, grouping for the investigation). This seating style has groups of four; in each group there is a student that is considered high, middle high, middle low, and low. This classification relates partly to their academic skills and to their collaboration/communicative skills. Through grouping students in this manner, students are able to collaborate with peers of varying abilities. I am also incorporating table talk and pair discussion so that students may communicate their observations/opinion to various peers. This lesson also incorporates an investigation so that students are able to conceptualize the concept being discussed.  |
| **Step-by-Step Plan**(What exactly do you plan to do in teaching this lesson? Be thorough. Act as if you needed a substitute to carry out the lesson for you.)Where applicable, be sure to address the following:* What Higher Order Thinking (H.O.T.) questions will you ask?
* How will materials be distributed?
* Who will work together in groups and how will you determine the grouping?
* How will students transition between activities?
* What will you as the teacher do?
* What will the students do?
* What student data will be collected during each phase?
* What are other adults in the room doing? How are they supporting students’ learning?
* What model of co-teaching are you using?
 | Time 5 minutes15 minutes15 minutes 15 minutes 15 minutes 10 minutes 5 minutes   | Who is responsible (Teacher or Students)?Teacher Teacher Students Teacher  | Each content area may require a different step-by-step format. Use whichever plan is appropriate for the content taught in this lesson. For example, in science, you would detail the 5 Es here (Engage/Encountering the Idea; Exploring the Idea; Explanation/Organizing the Idea; Extend/Applying the Idea; Evaluation).* Introduce:
* Today we are going to do an investigation on shadows.
* Can anybody remind me what a shadow is/what makes a shadow?
* The sun is a giant source of light!
* Introduce Investigation:
* We are going to track the shadow of this ruler outside throughout the day!
* We are going to split the class into two groups; each group will investigate a different ruler.
* Investigation:
* 8:30
* We are going to go outside and set up our investigation
* Pass out handouts (later glue into science journal)- students write name and date, get clipboard.
* Once outside, set up experiment, have the students record data (remember snap cubes).
* Inside, make prediction for what will happen when we check it later
* 10:00
* Go outside, check, record
* Inside, color chart, discuss with table what happened/what changed.
* Have a few students share what they discovered.
* 11:30
* Later, go outside, check, record
* Inside, color chart, discuss with table what happened/what changed.
* Have a few students share what they discovered.
* 1:00
* Go outside, check, record
* Inside, color chart
* Modified stand up, hand up, pair up
* Students will partner with a student from the other group to discuss and compare their data
* Have a few groups share what they found.
* Wrap up lesson; we did this investigation so that we could learn more about shadows and how they work!
* Shadows are all around us, and as we just learned, they move throughout the day (because the sun moves). Lets remember this next time you see your shadow!
* Pass out exit ticket: “How did the shadow move throughout the day?
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| **What will you do if…** | **…a student struggles with the content?**In the student struggles with the content they will have the opportunity to collaborate with peers and the educator to further their comprehension of the content. They will also be provided with a copy of the chart to fill out so that they are not required to do so individually.  |
| **What will you do if…** | **…a student masters the content quickly?**If the student masters the content quickly, they will be having the opportunity to lead discussions with their peers and contribute to enriching the discussion.  |
| **Meeting your students’ needs as people and as learners** | **If applicable, how does this lesson connect to the interests and cultural backgrounds of your students?**This lesson connects to the interests of my students because it provides them the opportunity to investigate/be a scientist, which is an interest throughout the classroom.  |
| **If applicable, how does this lesson connect to/reflect the local community?**This lesson connects to the local community because the community resides in the state of Florida, “the sunshine state.” Since the community is in the sunshine state, the source of light that causes many shadows (the sun) is prominent and the students’ community has various shadows.  |
| **How will you differentiate instruction for students who need additional challenge during this lesson (enrichment)?**In order to provide students with enrichment activities, they will have the opportunity to lead the classroom in a brief discussion. |
| **How will you differentiate instruction for students who need additional language support?**If the students need additional language support, they will have the sheet pre-written so that they only have to fill it in. They will also have the opportunity to answer written questions through visual forms.  |
| **Accommodations (If needed)**(What students need specific accommodation? List individual students (initials), and then explain the accommodation(s) you will implement for these unique learners.) | J: (D/HH) use of a RFM and an interpreter A: (muscular problem) will use a wheelchair to travel outside, we will not travel onto the grass so that he is able to participate. ELL students: provide a vocabulary sheet that includes photographs of important words related to shadows (vocabulary words should include: shadow, cloud, sun, and light). The students are able to answer fill out the shadow investigation worksheets in either written or drawn form. |
| **Materials**(What materials will you use? Why did you choose these materials? Include any resources you used. This can also include people!) | Chart worksheet Prediction worksheet Ruler Clay Exit ticket  |