

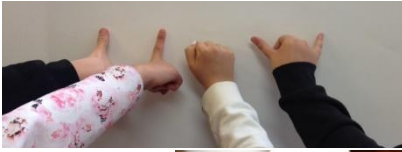


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| <p style="text-align: center;">TITLE</p>  | <p style="text-align: center;">Using shadows to measure distances and time</p> |
| <p style="text-align: center;">SUBJECTS</p> | <p>Science, Technology, Engineering, Art, Maths</p> |
| <p style="text-align: center;">CLASS</p>  | <p>FIRST CLASS OF THE SECONDARY SCHOOL</p> |
| <p style="text-align: center;">DURATION</p> | <p>8 hours</p> |
| <p style="text-align: center;">MATERIALS</p> | <p>String, paper, colored pencils, chawks, protractor, small objects.</p> |
| <p style="text-align: center;">OBJECTIVES</p> | <p>Students determine the pattern (length and direction) of shadows cast by sunlight during time and develop an interpretation of the patterns and variations observed. They design an investigation to observe shadows during the day. They relate their observations to the changing position of the Sun in the sky and suggest how their can use it to measure the time of day and the distances between objects.</p> <ul style="list-style-type: none"> - Science: solar system and sunlight, apparent movement of the Sun - Technology: use of the protractor - Engineering: manage and build different tools - Art: different types of artistic products - Mathematics: geometric forms, measurement, measure of angles, time measurement systems. |

TOPICS



- Calculating the distances between objects in the sky with hands and fingers
- observing and tracking shadows of different objects during time
- Calculating the angle by which a shadow moves during time
- Using shadows to determine time: building a sundial

ASSESSMENT

- Students recall the processes that regulate the sun's position in the sky and understand that the rotation of the Earth provides a system to measure time.