

Topic: Sundial

Resources: a large green baseplate; instruction card 448 and corresponding construction material



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Activities:

1. To every team, the teacher distributes the instruction card and construction material.
2. The teacher shows pictures of various sundials to the children, saying that long ago people used them to measure time. The teacher explains that they made them by placing a stick at the center of a circle. When the sun shone on the stick, it cast a shadow on a particular point on the circle. After a while, the shadow fell on another part of the circle. This is one way ancient people measured time that passed. The teacher points out to the children that the sundial is not like our clocks but only part of a circle. This is because the sun rises in the east and sets in the west.
3. The teacher explains that each team will make a LEGO Duplo model of a sundial like a clock. The teams do this.
4. The teams take their models out into the schoolyard with their teacher. Each team places its sundial on a flat surface in an open sunny place.
5. The teacher asks the children to look at the shadow cast by the column in the middle of their clock; and explains that the sundial must be 'aligned' with the sun. To do this, they need to rotate the plate so that the shadow falls toward the small bricks with numerals 1, 2.
6. The children leave their sundials where they are and go inside.
7. After two or three hours, the children and their teacher go out into the yard again. Each team takes a 2x2 brick. The teams check their sundial. The children, with the help of the teacher, find that the shadow has moved. They show, on the sundial, how the shadow has moved by placing the 2x2 brick where the shadow now falls.
8. After the same time interval has passed, the children go out again, mark the new position of the shadow, collect their models and take them back into the classroom.
9. The teacher, with the children, comments that the displacement of the shadow is the same for both time intervals. Together they conclude that time intervals can be measured with the sundial. Also, a sundial is not a full circle like our clocks because of how the sun and earth move.

