1. **Warm-up Activity:** On a sunny day take your students outside where there is pavement. This should be as close to the start of the school day as possible. Ask the students to spread out so they are able to see their entire shadow. Provide five minutes for them to play with their own shadow. Ask students to share observations with a partner of what they noticed as they played.

2. Group students into pairs and give each pair a piece of chalk. Explain that one group member will create a shadow while the other traces it. Guide students to trace their shoes so they remember exactly where they were standing. Ask the student whose shadow was drawn to stand next to it and compare their height with that of the shadow.

3. Revisit the shadows around noon. Ask each student to stand on the outline of their shoes. Ask the students to discuss with their partner what happened to their shadow. It is anticipated that their shadow would have moved from west to east. Re-measure the length and ask students to discuss what happened to the size of their shadow. The shadow should be smaller than before.

4. Ask the other partner to stand on the shoe outline and pose for another outline. The other partner will trace their shadow.

5. Revisit the shadow right before school ends. Ask students to measure them again and discuss what has happened. It is anticipated students will note that the shadows changed from large to small and back to large again. They all moved from west to east during the day.

6. Day 2: Revisit the shadows one more time. as early in the morning as you can. This time bring out a globe with the one-inch paper child figure cut out. Place the paper child on the globe where your school is located standing it up using adhesive.

7. Ask students to stand on their shadows again. Their shadows should be close to their outlines from the previous day at that time.

8. Place the globe in the sun. Turn it so your paper child lines up with the shadows on the ground. Have them watch as you turn the globe west to east. The shadow will move and become shorter. Ask the students what caused the shadow to change. It is anticipated that students will notice the direction of the sun changes as the globe (Earth) moved. Emphasize that Earth is moving, not the sun.

9. Back in the classroom, ask students to apply what they learned by drawing a picture showing how day and night occur.

Extension Activity

Now that the students have learned the Earth is moving, not the sun, ask them to experiment with the paper child and move it to a different hemisphere. Ask students what the sun would look like to the child in the different locations.

Sources

http://starchild.gsfc.nasa.gov/docs/StarChild/questions/question31.html
http://www.nasa.gov/audience/forkids/kidsclub/flash/index.html