Name: _____

Shifting Skies

Part 1:

Introduction:

1. *Circle what is different about the two pictures.*





2. What is needed to make a shadow?

_____ _____

3. Below is what we will use for these things in our experiment.

_____ _____

4. Draw what is useful in determining directions:

Morning, Lunch, and Afternoon Observations:

Morning (blue): Shadow Length: (Circle one) short medium long

Shadow Direction: _____

Picture of my Shadow



Lunch (green): Shadow Length: (Circle one) short medium long

Shadow Direction: _____

Picture of my Shadow



Afternoon (red): Shadow Length: (Circle one) short medium long

Shadow Direction: _____

Picture of my Shadow



Explaining Data:

5. During our observations we: (Circle one)

Changed / Stayed the same

6. During our observations our shadow: (Circle one)

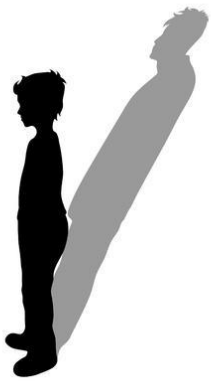
Changed / Stayed the same

7. What might explain the change?

_____
_____

8. What other data could we collect to test this?

_____
_____



Part 2:

Morning, Lunch, and Afternoon Observations:

Morning (blue):

Is your shadow about the same as

Part I: (Circle one)

Yes No

Sun Position: _____

Picture of my Shadow and the Sun



Lunch (green):

Is your shadow about the same as Part I: (Circle one)

Yes No

Sun Position: _____

Picture of my Shadow and the Sun



Afternoon (red):

Is your shadow about the same as

Part I: (Circle one)

Yes No

Sun Position: _____

Picture of my Shadow and the Sun



Explaining Data:

9. The _____ changed about the Sun.

10. The _____ stayed the same about the Sun.

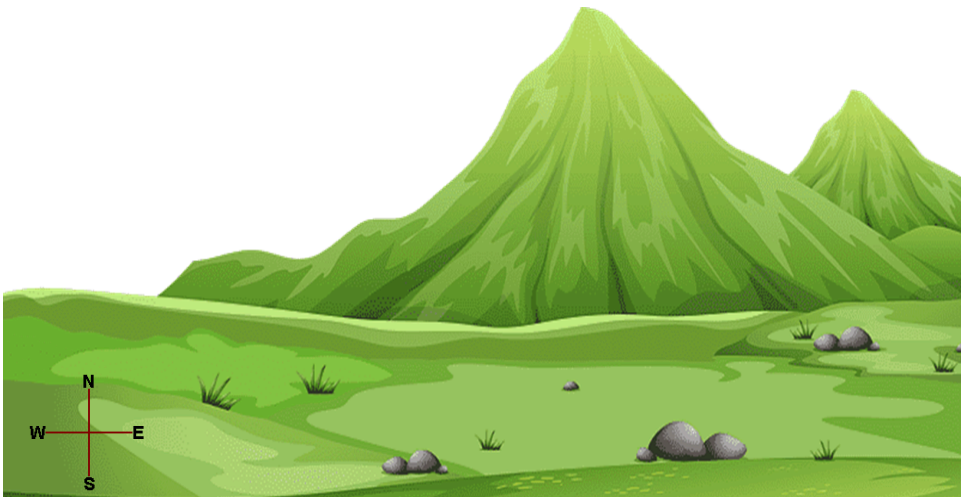
11. Did your shadows change in the same way as Part 1? (Circle one)

Yes No

12. Do you think the Sun was responsible for the changes seen in your shadow during the day? (Circle one)

Yes No

13. Draw the path that the Sun takes during the course of the day, in the picture below.



Part 3:

Sun and Earth Patterns

14. During the day the Sun seemed to

    _____, which changed our

    _____,

    however scientists have found that the Sun

    is _____

    _____ in the sky. How is

    this possible?

15. What could explain our shadows changing

    during the day?

    _____

    _____.

16. Is there anything else that this explains?

_____

_____

17. Draw a picture of the Earth and the Sun and indicate movement.

18. Is this motion predictable? (Circle one)

Yes No

19. How often does the pattern repeat?

_____

Watch Video

20. Does the video support your explanations? (Circle one)

Yes No

21. Was the Sun really moving in the video? (Circle one)

Yes No

If no, what explains what you saw:

_____

_____

22. What other object did you see in the sky?

_____

23. Do you think the object was moving? (Circle one)

Yes No



Part 4:

Moon and Earth Patterns A

Watch video

24. The

_____

changed about the Moon.

25. The _____

stayed the same about the Moon.

26. During the night the Moon seems to

_____. However, this can be

explained by the

_____

_____.

Moon and Earth Patterns B

Observer Pictures

27. The

_____

_ changed about the Moon.

28. The _____
stayed the same about the Moon.

29. If the Moon and the Earth were in the same place all the time would the Moon look different to us? (Circle one)

Yes No

30. What explains the phases of the Moon?

_____

_____

_____

31. Draw a picture of the Earth, Moon and the Sun and indicate movement.

32. Is this motion predictable? (Circle one)

Yes No

33. How often does the pattern repeat?

_____

34. What else do we see in the sky at night?

_____

35. Do you think the stars appear to stay in the same place every night? (Circle one)

Yes No

Part 5:

Star and Earth Pattern A

Watch video

36. The _____ _ changed about the stars.

37. The _____ stayed the same about the stars.

38. What could explain this? _____

Watch video

39. Does the video support your explanation? (Circle one)

Yes No

Star and Earth Pattern B

Look at Pictures

40. The _____ _ changed about the stars.

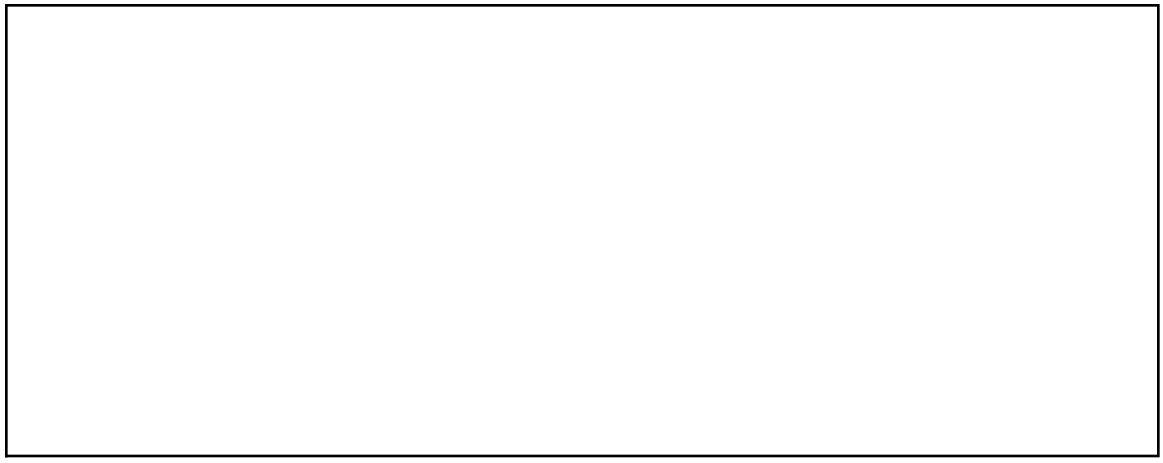
41. The _____ stayed the same about the stars.

42. What could explain what you are see?

_____

_____

43. Draw a picture of the Earth, Moon, stars, and the Sun and indicate movement.



44. Is this motion predictable? (Circle one)

Yes No

45. How often does the pattern repeat?

_____

46. What objects that we discussed have patterns in their movement?