

A

Observing the sun- Changes in the position of the sun

Warmer

1. How to use the compass? 先讓指針靜止在對齊
2. What are the maximum and minimum height angles? 0, 90
3. When are the vernal equinox, summer solstice, autumnal equinox, and winter solstice? 春: 3/21 冬: 12/22
夏: 6/21 秋: 9/23

Language

spring	summer	fall	north
winter	compass 指南針	orbit 軌道	rotates 旋轉
east	west	south	axis 軸

1. When the earth rotates, day changes to night and night changes to day.
2. Here comes the Spring with the flowers in the ground.
3. Here come the summer with the heat from the sun.
4. When I face south, my right hand is west.

Content

Watch a video of Seasons Song (2:27) and discuss the following questions in a small group.

1. Please write down one sentence you remember most about the four seasons.

Notes: <u>花會掉到地 如果雨停了, 就有彩虫工。</u>
<u>太陽會直射, 非常熱, 有小孩會一起玩。</u>
<u>葉子換顏色, 葉子掉落。</u>
<u>有水和雪</u>

Thinking

1. Complete a solar observation record sheet

Solar Observation Record Sheet					
Date:	Observer:				
Place:					
Time(clock)	9:25	11:10	13:25	15:00	16:00
Shadow azimuth	西北	西北	東北	東北	東北
sun azimuth	東南	東南	東南	西南	西南
solar altitude(°)	30	65	50	50	45

AT

Observing the sun- Changes in the position of the sun

Warmer

1. How to use the compass? *先找到南方, 再把指南針轉正。*
2. What are the maximum and minimum height angles? *0° 跟 90° 90° 跟 0°*
3. When are the vernal equinox, summer solstice, autumnal equinox, and winter solstice? *3/22, 6/22, 9/22, 12/22*

Language

spring	summer	fall	north
winter	compass 指南針	orbit 軌道	rotates 旋轉
east	west	south	axis 軸

1. When the earth rotates, day changes to night and night changes to day.
2. Here comes the spring with the flowers in the ground.
3. Here come the summer with the heat from the sun.
4. When I face south, my right hand is west.

Content

Watch a video of Seasons Song (2:27) and discuss the following questions in a small group.

1. Please write down one sentence you remember most about the four seasons.

Notes: <u>spring: flowers in the ground.</u>
<u>summer: The heat from the sun.</u>
<u>fall: The fall with the leaves falling down.</u>
<u>winter: 沒有葉子的大樹</u>

Thinking

1. Complete a solar observation record sheet

Solar Observation Record Sheet					
Date: <u>110.9.10</u>	Observer: <u>Kutar 陳宇康</u>				
Place: _____					
Time(clock)	<u>9:25</u>	<u>11:10</u>	<u>13:25</u>	<u>15:00</u>	<u>16:00</u>
Shadow azimuth	<u>西偏北</u>	<u>西偏北</u>	<u>東偏北</u>	<u>東偏北</u>	<u>東偏北</u>
sun azimuth	<u>東偏南</u>	<u>東偏南</u>	<u>東偏南</u>	<u>西偏南</u>	<u>西偏北</u>
solar altitude(°)	<u>30°</u>	<u>65°</u>	<u>50°</u>	<u>50°</u>	<u>45°</u>

Observing the sun- Changes in the position of the sun

Warmer

- How to use the compass? 將指北針放地上, 指針停後, 對準北方
- What are the maximum and minimum height angles? 最高高度角 90° 最低 0
- When are the vernal equinox, summer solstice, autumnal equinox, and winter solstice? 春分 3/21 夏至 6/21 秋分 9/23 冬至 12/22

Language

spring	summer	fall	north
winter	compass 指南針	orbit 軌道	rotates 旋轉
east	west	south	axis 軸

- When the earth rotates, day changes to night and night changes to day.
- Here comes the spring with the flowers in the ground.
- Here come the summer with the heat from the sun.
- When I face south, my right hand is west.

Content

Watch a video of Seasons Song (2:27) and discuss the following questions in a small group.

- Please write down one sentence you remember most about the four seasons.

Notes: <u>春天: 花會掉地上, 如果雨多, 彩虹會出來。</u>
<u>夏天: 太陽直射, 非常熱, 小孩子有樂趣。</u>
<u>秋天: 葉子會換顏色, 葉子會掉落。</u>
<u>冬天: 會下雪, 非常冷。</u>

Thinking

- Complete a solar observation record sheet

Solar Observation Record Sheet					
Date: <u>9月10~11日</u>	Observer: <u>10</u>				
Place: <u>?</u>					
Time(clock)	<u>9:25</u>	<u>11:10</u>	<u>13:25</u>	<u>15:00</u>	<u>16:00</u>
Shadow azimuth	<u>西偏北</u>	<u>西偏北</u>	<u>東偏北</u>	<u>東偏北</u>	<u>東偏北</u>
sun azimuth	<u>東偏南</u>	<u>東偏南</u>	<u>東偏南</u>	<u>西偏南</u>	<u>西偏北</u>
solar altitude(°)	<u>30</u>	<u>65</u>	<u>45</u>	<u>50</u>	<u>45</u>

Observing the sun- Changes in the position of the sun

Warmer

把它放在地板上它會告訴你哪裡是南邊

1. How to use the compass? 最大 指南針 最小
2. What are the maximum and minimum height angles? 高度角 90° 和 0°
3. When are the vernal equinox, summer solstice, autumnal equinox, and winter solstice? 9/23 秋分, 3/22 春分, 6/22 夏至, 12/22 冬至

Language

spring	summer	fall	north
winter	compass 指南針	orbit 軌道	rotates 旋轉
east	west	south	axis 軸

1. When the earth rotates, day changes to night and night changes to day.
2. Here comes the spring with the flowers in the ground.
3. Here come the summer with the heat from the sun.
4. When I face south, my right hand is west.

Content

Watch a video of Seasons Song (2:27) and discuss the following questions in a small group.

1. Please write down one sentence you remember most about the four seasons.

Notes: Here come the summer with the heat from the sun. Here comes the spring with the flowers in the ground.

Thinking

1. Complete a solar observation record sheet

Solar Observation Record Sheet					
Date: 9/11	Observer: Sharine				
Place: 操場					
Time(clock)	9:25	11:10	13:25	15:00	16:00
Shadow azimuth	西偏北	西偏北	東偏北	東偏北	東偏北
sun azimuth	東偏南	東偏南	西偏南	西偏南	西偏南
solar altitude(°)	60°	60°	45°	40°	43°

AP

Observing the sun- Changes in the position of the sun

Warmer

1. How to use the compass? 平平放地上 它會告訴你 哪種是南
2. What are the maximum and minimum height angles? 90°
3. When are the vernal equinox, summer solstice, autumnal equinox, and winter solstice?

3/22 6/22 9/22 12/22

Language

spring	summer	fall	north
winter	compass 指南針	orbit 軌道	rotates 旋轉
east	west	south	axis 軸

1. When the earth rotates day changes to night and night changes to day.
2. Here comes the spring with the flowers in the ground.
3. Here come the summer with the heat from the sun.
4. When I face south, my right hand is west.

Content

Watch a video of Seasons Song (2:27) and discuss the following questions in a small group.

1. Please write down one sentence you remember most about the four seasons.

Notes:	<u>Her comes the spring big with the rainbir.</u>
	<u>Her comes the summer with heat from the sun.</u>
	<u>Her comes the fall with leaves changes blowing.</u>
	<u>Her comes the winter with the day night and freezing shorter.</u>

Thinking

1. Complete a solar observation record sheet

Solar Observation Record Sheet					
Date:	<u>9/23</u>	Observer: <u>Matthew</u>			
Place: _____					
Time(clock)					<u>16:00</u>
Shadow azimuth	<u>東</u>	<u>東</u>	<u>南</u>	<u>西</u>	<u>西</u>
sun azimuth	<u>西</u>	<u>50°</u>	<u>40°</u>	<u>40°</u>	<u>30°</u>
solar altitude(°)	<u>140°</u>	<u>50°</u>	<u>50°</u>	<u>30°</u>	<u>50°</u>

A++

Observing the sun- Changes in the position of the sun

Warmer

1. How to use the compass? Put the compass on the floor, and the compass will point where the sun is.
2. What are the maximum and minimum height angles? 90° 0°
3. When are the vernal equinox, summer solstice, autumnal equinox, and winter solstice? 9/23 is fall season, 3/22 spring 6/22 summer 12/22 winter.

Language

spring	summer	fall	north
winter	compass 指南針	orbit 軌道	rotates 旋轉
east	west	south	axis 軸

1. When the earth rotates, day changes to night and night changes to day.
2. Here comes the spring with the flowers in the ground.
3. Here come the summer with the heat from the sun.
4. When I face south, my right hand is west.

Content

Watch a video of Seasons Song (2:27) and discuss the following questions in a small group.

1. Please write down one sentence you remember most about the four seasons.

Notes:	spring = flowers in the ground
	summer = The heat from the sun.
	fall = the fall with the leaves falling down
	winter = with the ice and the snow.

Thinking

1. Complete a solar observation record sheet

Solar Observation Record Sheet					
Date:	9/6		Observer: priscilla Andrew Victor Claire		
Place:	out side our classroom				
Time(clock)	9:25	11:30	13:25	3:00	4:00
Shadow azimuth	west to north	west to north	east to north	west to south	east to north
sun azimuth	east to south	east to south	east to south	west to north	west to north
solar altitude(°)	30°	65°	45°	50°	43°

ATT

Observing the sun- Changes in the position of the sun

Warmer

1. How to use the compass? Put the compass on the floor it will tell you where is south.
2. What are the maximum and minimum height angles? 90 and 0°
3. When are the vernal equinox, summer solstice, autumnal equinox, and winter solstice?
 - 3/22
 - 6/22
 - 9/22
 - 12/22

Language

spring	summer	fall	north
winter	compass 指南針	orbit 軌道	rotates 旋轉
east	west	south	axis 軸

1. When the earth rotates, day changes to night and night changes to day.
2. Here comes the spring with the flowers in the ground.
3. Here come the summer with the heat from the sun.
4. When I face south, my right hand is west.

Content

Watch a video of Seasons Song (2:27) and discuss the following questions in a small group.

1. Please write down one sentence you remember most about the four seasons.

Notes: spring: Here comes the spring with the rainbow in the sky.
summer: Here comes the summer with the kids have fun.
fall: Here comes the fall with the wind flow in loud
winter: Here comes the winter with the ice and the snow

Thinking

1. Complete a solar observation record sheet

Solar Observation Record Sheet					
Date: <u>9/13</u>	Observer: <u>Vita</u>				
Place: <u>play ground</u>					
Time(clock)	<u>9:25</u>	<u>11:10</u>	<u>13:25</u>	<u>15:00</u>	<u>16:00</u>
Shadow azimuth	<u>西偏北</u>	<u>西偏北</u>	<u>東偏北</u>	<u>東偏北</u>	<u>東偏北</u>
sun azimuth	<u>東偏南</u>	<u>東偏南</u>	<u>西偏南</u>	<u>西偏南</u>	<u>西偏南</u>
solar altitude(°)	<u>60</u>	<u>65</u>	<u>55</u>	<u>50</u>	<u>43</u>

Vita

AAA

Observing the sun- Changes in the position of the sun

Warmer

1. How to use the compass? 平放
2. What are the maximum and minimum height angles? 90° and 0°
3. When are the vernal equinox, summer solstice, autumnal equinox, and winter solstice?

Language

spring	summer	fall	north
winter	compass 指南針	orbit 軌道	rotates 旋轉
east	west	south	axis 軸

1. When the earth rotates, day changes to night and night changes to day.
2. Here comes the spring with the flowers in the ground.
3. Here come the summer with the heat from the sun.
4. When I face south, my right hand is west.

Content

Watch a video of Seasons Song (2:27) and discuss the following questions in a small group.

1. Please write down one sentence you remember most about the four seasons.

Notes: 1. Here comes the spring with the flowers in the ground. 2. Here come the summer with the heat from the sun. 3. Here comes the fall when the leaves change color. 4. Here comes the winter the ~~hot~~ cold. freeze

Thinking

1. Complete a solar observation record sheet

Solar Observation Record Sheet					
Date: <u>9/1</u>	Observer: <u>Tim</u>				
Place: <u>操場</u>					
Time(clock)	9:25	11:10	13:25	15:00	16:00
Shadow azimuth	西偏北	西偏北	東偏北	東偏北	東偏北
sun azimuth	東偏南	東偏南	西偏南	西偏南	西偏南
solar altitude(°)	60°	60°	43°	40°	23°

五心

5A Class 5/01 Number Name: wei-wei

A++

Observing the sun- Changes in the position of the sun

Warmer

1. How to use the compass? *when you need the compass, you should put on the floor*
2. What are the maximum and minimum height angles? *It's 90° and 0°.*
3. When are the vernal equinox, summer solstice, autumnal equinox, and winter solstice? *vernal equinox is on 3/22, summer solstice is on 6/22, autumnal equinox 9/22, winter solstice 12/22*

Language

spring	summer	fall	north
winter	compass 指南針	orbit 軌道	rotates 旋轉
east	west 西	south	axis 軸

1. When the earth rotates, day changes to night and night changes to day.
2. Here comes the spring with the flowers in the ground.
3. Here come the summer with the heat from the sun.
4. When I face south, my right hand is west.

Content

Watch a video of Seasons Song (2:27) and discuss the following questions in a small group.

1. Please write down one sentence you remember most about the four seasons.

Notes: <i>spring: ... have.</i>
<i>winter: The night longer than summer.</i>
<i>summer: The living things have new life and food too.</i>
<i>Fall: The leaves change color and go down on the floor.</i>

Thinking

1. Complete a solar observation record sheet

Solar Observation Record Sheet					
Date: <i>9/3</i>	Observer: <i>Team 6</i>				
Place: <i>playground</i>					
Time(clock)	<i>9:25</i>	<i>11:10</i>	<i>13:25</i>	<i>15:00</i>	<i>16:00</i>
Shadow azimuth	<i>西偏北</i>	<i>西偏北</i>	<i>東偏北</i>	<i>東偏北</i>	<i>東偏北</i>
sun azimuth	<i>東偏南</i>	<i>東偏南</i>	<i>西偏南</i>	<i>西偏南</i>	<i>西偏南</i>
solar altitude(°)	<i>60</i>	<i>65</i>	<i>45</i>	<i>50</i>	<i>43</i>

Observing the sun- Changes in the position of the sun

Warmer

1. How to use the compass? *Put the compass on the floor, and it will tell you where is the sun.*
2. What are the maximum and minimum height angles? *高度角 90° 0°*
3. When are the vernal equinox, summer solstice, autumnal equinox, and winter solstice? *3月21日 6月22日 9月22日 12月22日*

Language

spring	summer	fall	north
winter	compass 指南針	orbit 軌道	rotates 旋轉
east	west	south	axis 軸

1. When the earth rotates day changes to night and night changes to day.
2. Here comes the spring with the flowers in the ground.
3. Here come the summer with the heat from the sun.
4. When I face south, my right hand is west.

Content

Watch a video of Seasons Song (2:27) and discuss the following questions in a small group.

1. Please write down one sentence you remember most about the four seasons.

Notes: *Here comes the spring with the rainbow in the sky.
Here comes the summer with the kids having fun.
Here comes the fall leave falling down.
Here comes the winter with the night getting longer.*

Thinking

1. Complete a solar observation record sheet

Solar Observation Record Sheet					
Date: <u>9/16</u>	Observer: <u>Joanne</u>				
Place: <u>操場</u>					
Time(clock)	<u>9:25</u>	<u>11:10</u>	<u>13:25</u>	<u>15:00</u>	<u>16:00</u>
Shadow azimuth	<u>西偏北</u>	<u>西偏北</u>	<u>東偏北</u>	<u>東偏北</u>	<u>東偏北</u>
sun azimuth	<u>東偏南</u>	<u>東偏南</u>	<u>西偏南</u>	<u>西偏南</u>	<u>西偏南</u>
solar altitude(°)	<u>30°</u>	<u>65°</u>	<u>55°</u>	<u>50°</u>	<u>43°</u>

A44

Observing the sun- Changes in the position of the sun

Warmer

1. How to use the compass? 平放指南針 ✓
2. What are the maximum and minimum height angles? 90° and 0°
3. When are the vernal equinox, summer solstice, autumnal equinox, and winter solstice? 1. 3/22 2. 6/22 3. 9/22 4. 12/22 ✓

Language

spring	summer	fall	north
winter	compass 指南針	orbit 軌道	rotates 旋轉
east	west	south	axis 軸

1. When the earth rotates, day changes to night and night changes to day.
2. Here comes the spring with the flowers in the ground.
3. Here come the summer with the heat from the sun.
4. When I face south, my right hand is west.

Content

Watch a video of Seasons Song (2:27) and discuss the following questions in a small group.

1. Please write down one sentence you remember most about the four seasons.

Notes: spring: Here comes the spring with the flowers in the ground.
sumer: Here come the summer with the heat from the sun.
autumnal: Here comes the fall with the leaves falling down.
winter: Here comes the winter with the night getting longer.

Thinking

1. Complete a solar observation record sheet

Solar Observation Record Sheet					
Date: 11.9.11			Observer: Eunice		
Place: 操場					
Time(clock)	9:25	11:10	13:25	15:00	16:00
Shadow azimuth	西偏北	西偏北	東偏北	東偏北	東偏北
sun azimuth	東偏南	東偏南	西偏南	西偏南	西偏南
solar altitude(°)	60°	60°	45°	40°	43°