Warm Up 4: Tides
11-15-18

LT I can explain how the moon affects the tides.

Q1. What is it called when the moon is bigger than half full?

Q2. What is the alinement of the sun, earth and moon at a full moon?

Warm Up : Tides
11-15-18

LT I can explain how the moon affects the tides.

Q1. What is it called when the moon is bigger
than half full?
A1) Gibbous

Q2. What is the alinement of the sun, earth and
moon at a full moon?
A2) They are all aligned on one axis (in a row)

Quiz: Space

Out of 10.5

12 Points possible

Ask neighbors questions

Ask LeMay

Vocab

19

Spring Tides: When the sun, Moon and Earth are in general alignment, creating larger tides

-Happen twice a month at New and Full moon phase
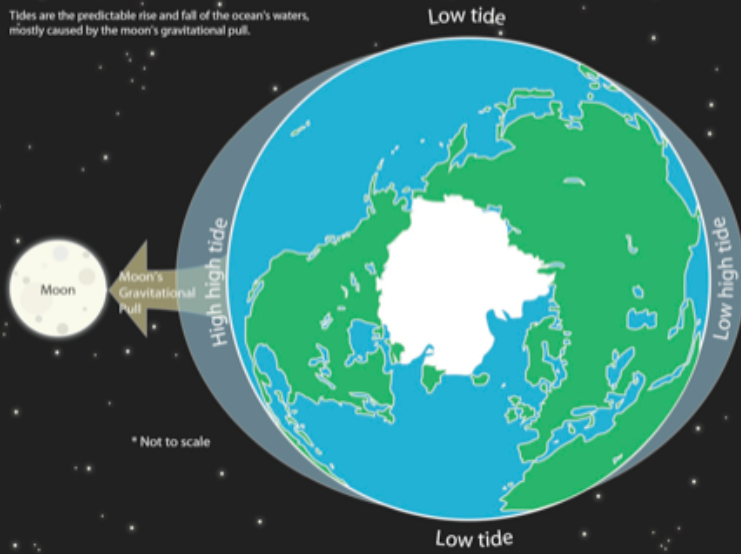
20

Neap tides: When the earth and the sun make a right angle with the line from Earth and Moon

-Gravitational pull from Sun and Moon counteract each other

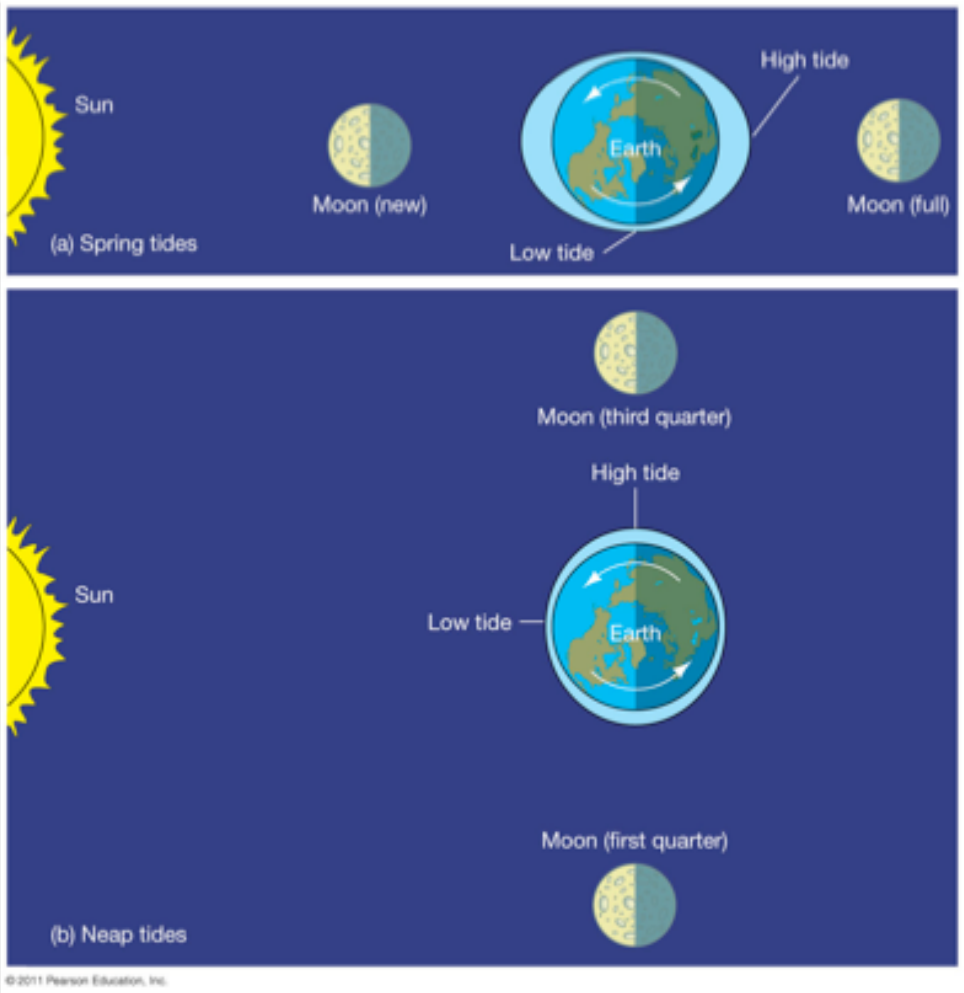-Happen twice a month at 1st and 3rd quarter phases.

Earth's Tides

Tides are the predictable rise and fall of the ocean's waters, mostly caused by the moon's gravitational pull.

Low tide

High high tide

Moon

Moon's Gravitational Pull

Low high tide

* Not to scale

Low tide

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Sun

New Moon

Spring tide

First Quarter

Neap tide

Last Quarter

Neap tide

Spring tide

Full Moon

Adding the Sun into the Equation

When the sun and moon align, their combined gravitational forces create **spring tides**.

When the sun and moon are not aligned, and are at right angles to each other in relation to Earth, their gravitational forces work against each other to create **neap tides**.

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Sun

High tide

Earth

Moon (new)

Moon (full)

Low tide

(a) Spring tides

Moon (third quarter)

High tide

Low tide
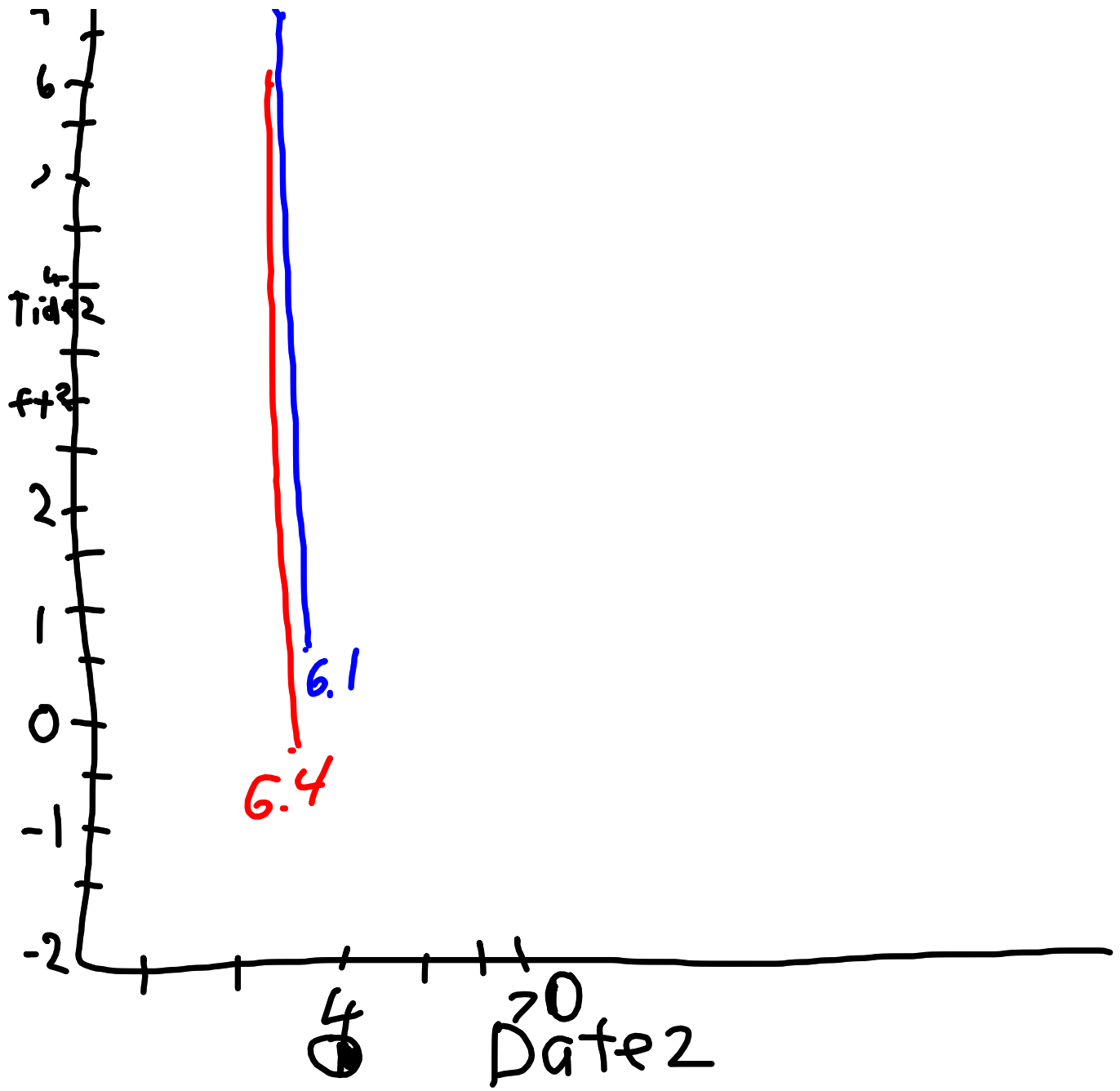
Earth

Sun

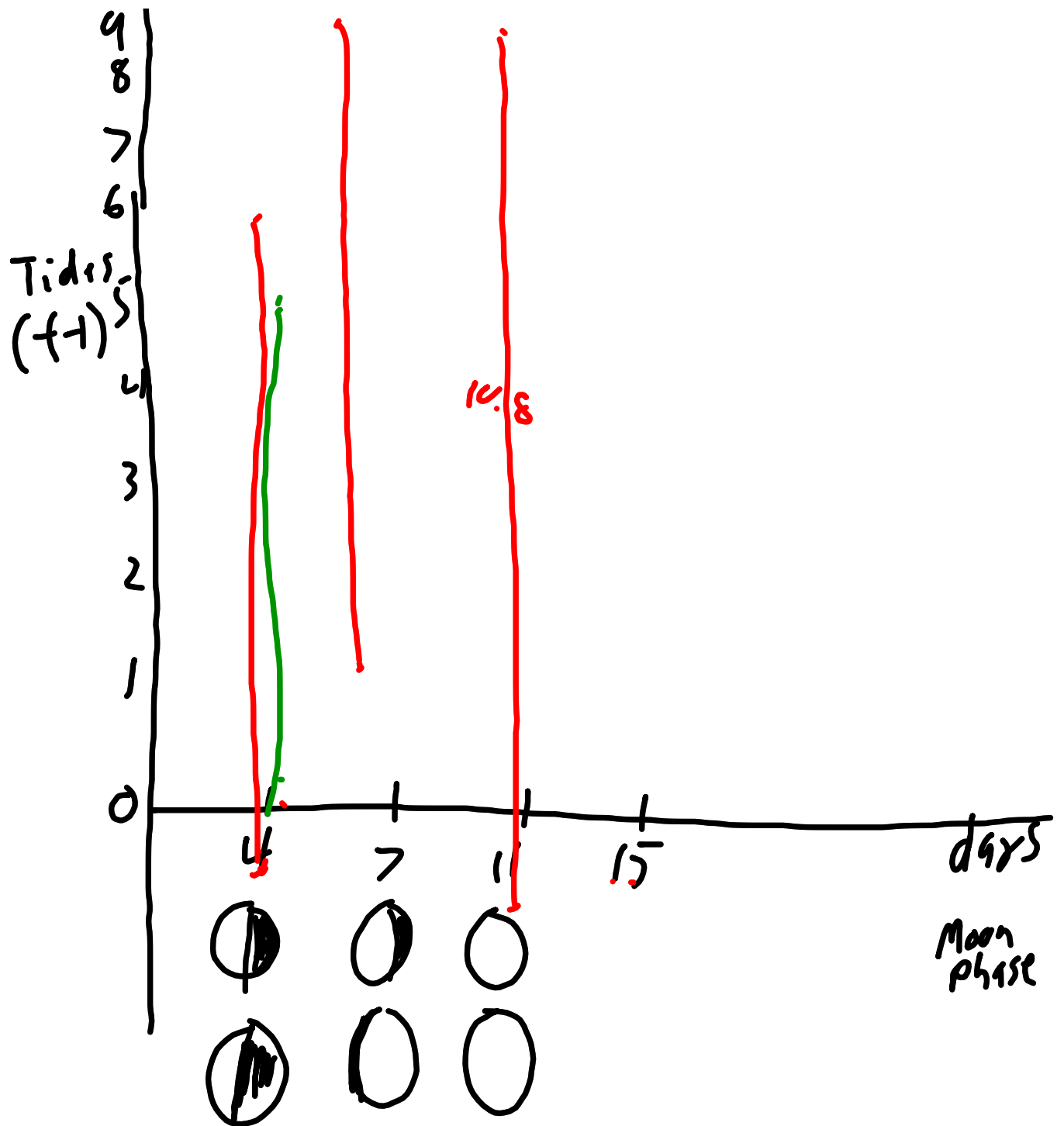Moon (first quarter)

(b) Neap tides

HW 6: Moon & Tides

Look at the handout on high and low tides

Use the data to make a line graph

1. What should our x and y axis be labeled

2. What values should we start our x and y axis

3. How can we put the different moon phases on our graph

Tides
(ft)

9
8
7
6
5
4
3
2
1
0

10.8

days

4   7   11   15

Moon
phase

Warm Up : Tides
11-15-18

LT I can explain how the moon affects the tides.

Q1. What is it called when the moon is bigger
than half full?

Q2. What is the alinement of the sun, earth and
moon at a full moon?

Q3. What is the differnece between a neap tide
and spring tide?

Q4 How does the allignment of the moon affect
tides?

Warm Up : Tides
11-15-18

LT I can explain how the moon affects the tides.

Q3. What is the difference between a neap tide
   and spring tide?
A3. Neap tide is a smaller tide, Spring tides are
   the largest tides.

Q4 How does the alignment of the moon affect
   tides?
A4. When the moon, earth and sun are in
alignment (in a row) the gravitational pull is
amplified and we get spring tides. When the
moon in 90 degrees to the earth and sun, the
pull is minimized and we get neap tides.