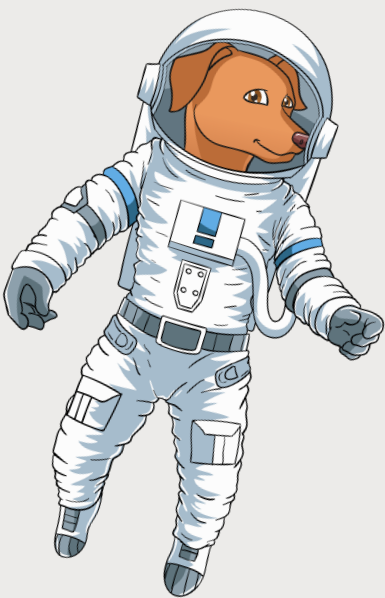# Colonizing Mars Project

Use your skills and understanding of fractions to help Kira and Shenzi navigate a new planet.
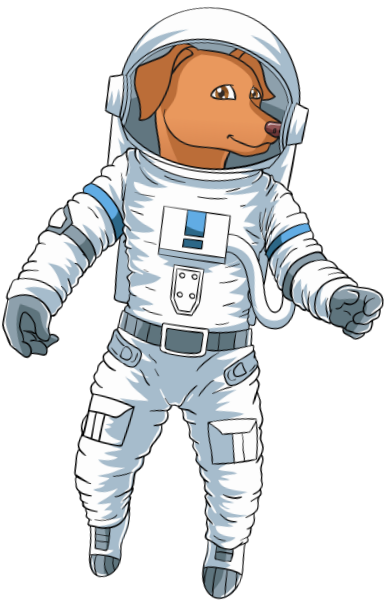
THE Math Dogs

Survival Tipes

Plan your excursions carefully:

You'll need to do the math (convert mixed numbers to improper fractions, find common denominators, and add fractions) to determine the amount of fuel you're using for your Mars Missions.

Check it out, I've done the first one for you. This morning I needed to go to the mineral deposits (location B) and head to the drilling station (location C) before heading back to home base (location A) for lunch. See my calculations below!

A <—> B = 7/8 tank

B <—> C = 5/6 tank

C <—> A = 3/4 tank

Lowest common denominator

4	6	8
8	12	16
12	18	(24)
16	(24)	32
20	30	
(24)		
30		

7/8 + 5/6 + 3/4

Adding fuel tank usage using common denominators

21/24 + 20/24 + 18/24 = 59/24

Converting improper fraction into a mixed number

59 ÷ 24 = 2 r 11

$2 \ ^{11/24}$

Final answer

Colony Maps and Distance

The amount of fuel needed to travel between posts is listed below.

A —> C = ¾ tank

A —> B = 7/8 tank

A —> E = 1 ¾ tank

B —> D = ¾ tank

B —> C = 5/6 tank

C —> F = 1 5/6 tank

D —> E = 5/8 tank

E —> H = 5/3 tank

F —> E = 2/3 tank

H —> G = ¼ tank

H —> I = 6/4 tank

Mars Colony Posts

A- Fueling Station and homebase

B- Mineral deposit

C- Drilling station

D- Water treatment site

E- Fueling station 2 and Recreation Center

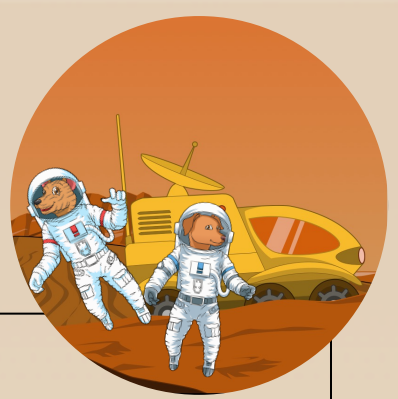F- Weather outlook station

G- Seed vault

H- Rocket repair and maintence center

I- Fueling station 3 and storage facility
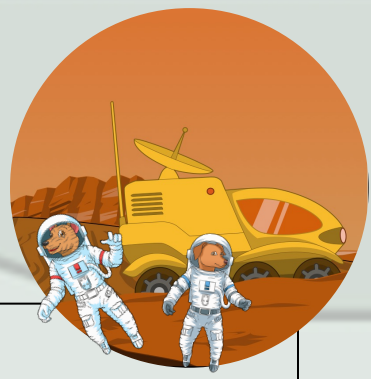
Day 1

Mission report:

- Leave homebase to visit the mineral deposit to collect samples
- From mineral deposit, go and check in on the drilling station that is looking for new resources for your colony
- Return to home base from the drilling station.

How much fuel was used? Show your working out below:

What is weather like on Mars? Do some research and jot some interesting facts you find. How might this weather make living on Mars a challenge?
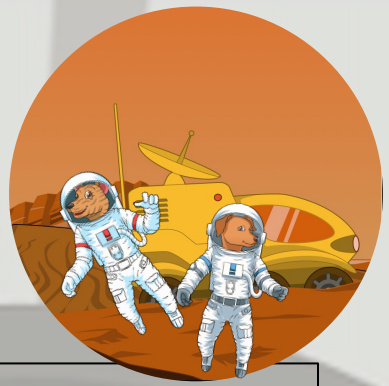
Day 2

Mission report:

- You must visit the weather outlook station (departing from homebase)... You fear some bad weather is on the way.
- Before returning to homebase you need to visit fueling station 2 and recreation center.

How much fuel was used? Show your working out below:

What types of minerals did you find? Do some research into Mars resources and jot down a few notes below. Sketch some of your samples, too!

Day 3

Write your own Mission report from today

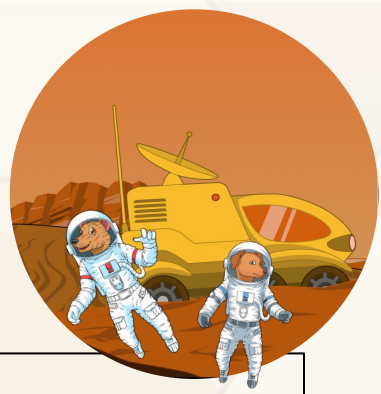*But make sure it adds up to the amount of fuel listed below (start at homebase).

Mission report:

**Today you used 4 tanks of fuel**

Show how you calculated and came up with your mission plan:

Hint- you visited Fueling Station 2 (Location E) and began your mission from homebase.

The Math Dogs

Day 4

Write your own Mission report from today

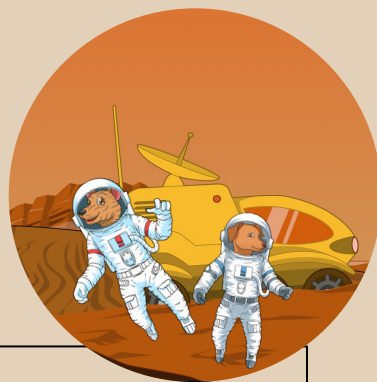*But make sure it adds up to the amount of fuel listed below (start at homebase).

Mission report:

Today you used exactly 5 tanks of fuel

Show how you calculated and came up with your mission plan:

Hint- Part of your mission was traveling between the weather outlook station and the recreation center. You began your mission at homebase.

The Math Dogs

Day 5

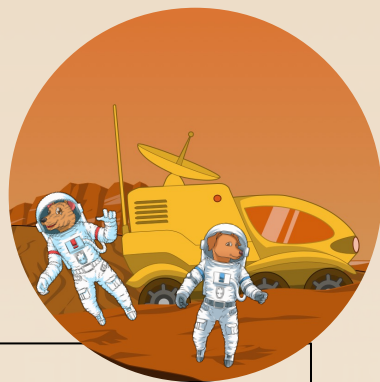Write your own Mission report from today

(Minimum 3 locations visited- can't be the same as another day)

Mission report:

Amount of fuel used:

Show how you calculated you fuel usage sketch/describe some highlights of your Day 5 excursion below:

Day 6

Write your own Mission report from today

(Minimum 3 locations visited- can't be the same as another day)

Mission report:

Amount of fuel used:

Show how you calculated you fuel usage sketch/describe some highlights of your Day 6 excursion below:

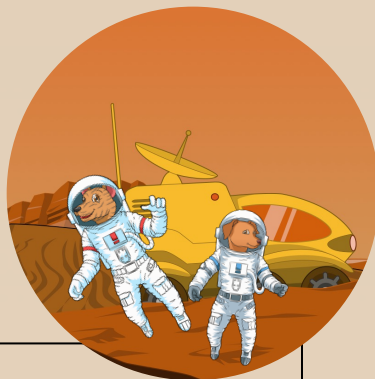# Day 7

Write your own Mission report from today

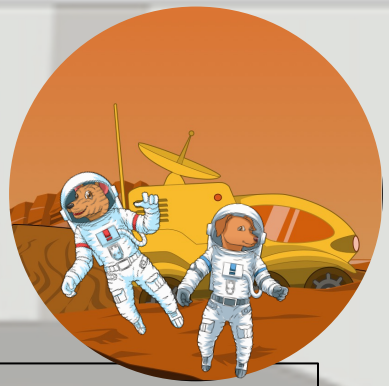(Minimum 3 locations visited- can't be the same as another day)

Mission report:

Amount of fuel used:

Show how you calculated you fuel usage sketch/describe some highlights of your Day 7 excursion below:

Day 3 Answer

Write your own Mission report from today

*But make sure it adds up to the amount of fuel listed below

Mission report:

Fueling Station and homebase to Mineral deposit,

then Mineral deposit to Water treatment site,

Then water treatment site to Fueling station 2 and Recreation Center,

Lastly, leave fueling station 2 and recreation center and return back home to fueling station and homebase.

**Today you used 4 tanks of fuel**

Show how you calculated and came up with your mission plan:

A --> B (7/8)

B --> D (3/4)

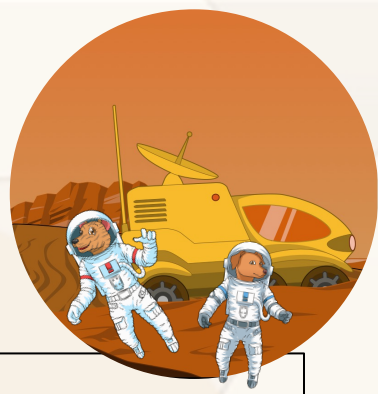D --> E (5/8)

E --> A (1 $\frac{3}{4}$)

= 4

Hint- you visited Fueling Station 2 (Location E)

Day 4 Answer

Write your own Mission report from today

*But make sure it adds up to the amount of fuel listed below

Mission report:

Fueling Station and homebase to drilling station,

Then, drilling station to Weather outlook station

Next, weather outlook station to Fueling station 2 and Recreation Center

Lastly, Fueling station 2 and Recreation Center back to homebase.

Today you used exactly 5 tanks of fuel

Show how you calculated and came up with your mission plan:

A -->C (3/4)

C --> F (1 $\frac{5}{6}$)

F --> E (2/3)

E--> A (1 ¾)

= 5

Hint- Part of your mission was traveling between the weather outlook lstation and the recreation center.