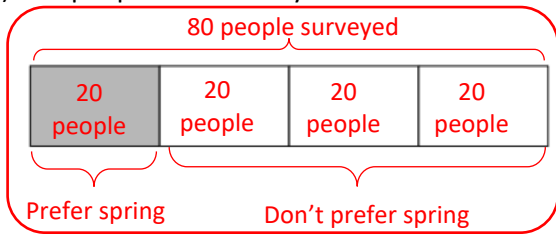# Modeling Benchmark Percents and Fractions

For each scenario described below, choose **_at least one_** of the four bar models to represent it and fill in all the information you can.

1) 80 people were surveyed. 25% of them said that spring was their favorite season.


Note: This model can also be used, using the unshaded part to represent the people who prefer spring.

Use the model you chose to fill in the information in the table below:

	Number of people	Fraction of people	Percent of people
People who prefer spring	20	20/80 or ¼	25%
People who do not prefer spring	60	60/80 or ¾	75%
Total	80	80/80 or 1	100%

2) Out of 60 people surveyed, 45 of them said they watch more than three hours of tv each day.
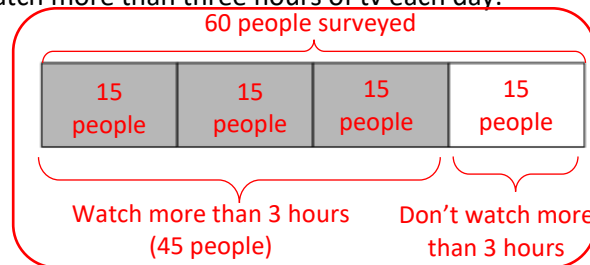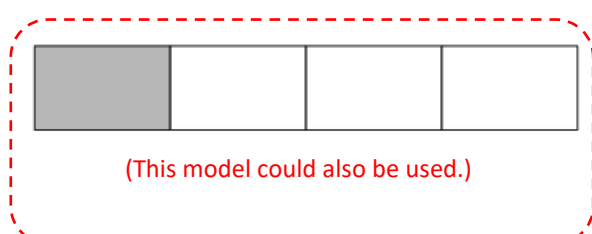
(This model could also be used.)

Use the model you chose to fill in the information in the table below:

	Number of people	Fraction of people	Percent of people
People who watch more than 3 hours of tv	45	45/60 or ¾	75%
People who do not watch more than 3 hours of tv	15	15/60 or ¼	25%
Total	60	60/60 or 1	100%

Modeling Benchmark Percents and Fractions

3) Half of the people surveyed said they are happy in their jobs. 35 people said they are happy.

(These models could also be used.)

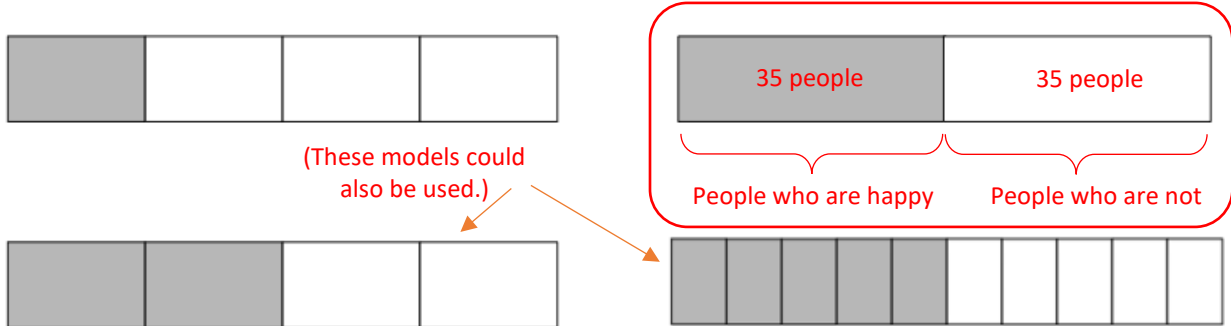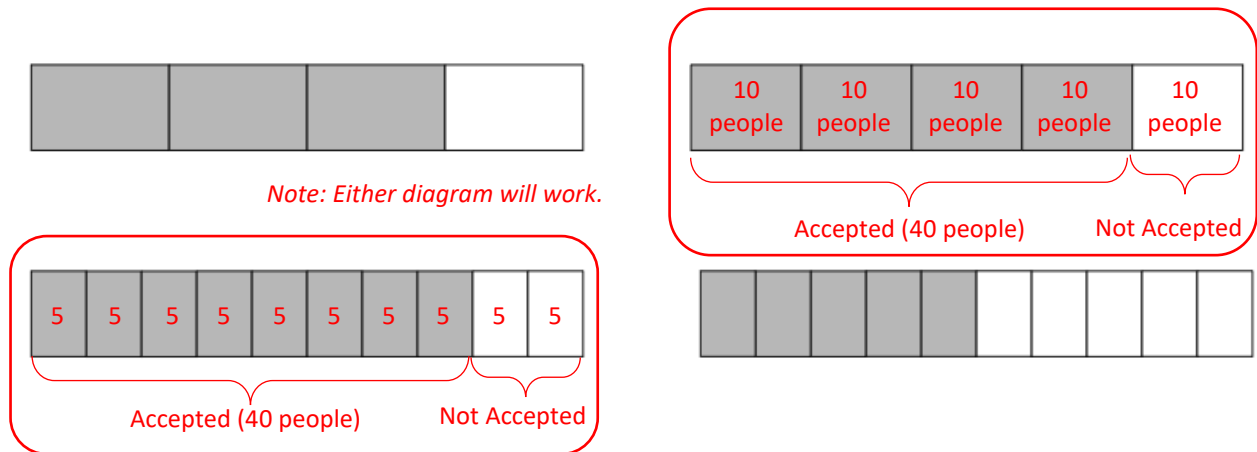| 35 people	35 people
People who are happy	People who are not

Use the model you chose to fill in the information in the table below:

	Number of people	Fraction of people	Percent of people
People who said they are happy in their jobs	35	35/70 or ½	50%
People who did not say they are happy in their jobs.	35	35/70 or ½	50%
Total	70	70/70 or 1	100%

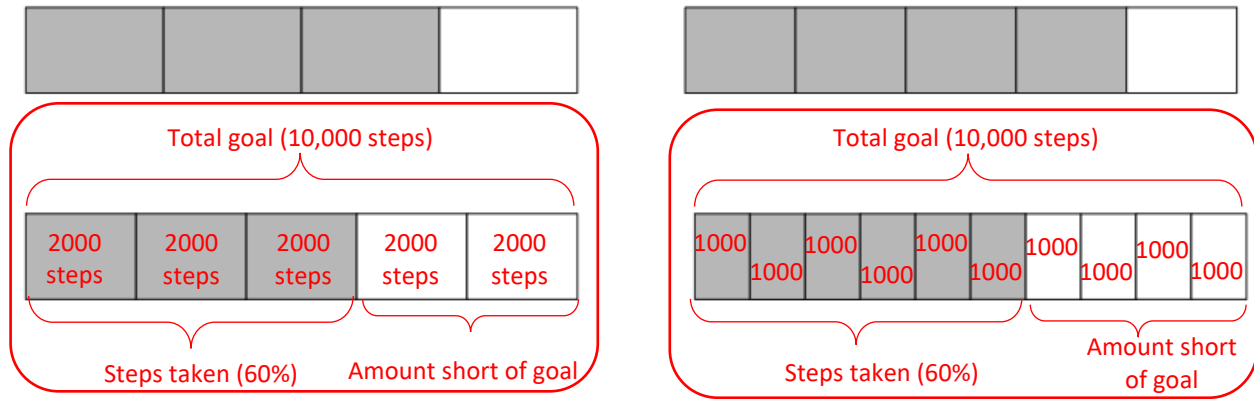4) A job training program accepted 80% of the people who applied. 40 people were accepted.

Note: Either diagram will work.

10 people	10 people	10 people	10 people	10 people
Accepted (40 people)				Not Accepted

5	5	5	5	5	5	5	5	5	5
Accepted (40 people)								Not Accepted	

Use the model you chose to fill in the information in the table below:

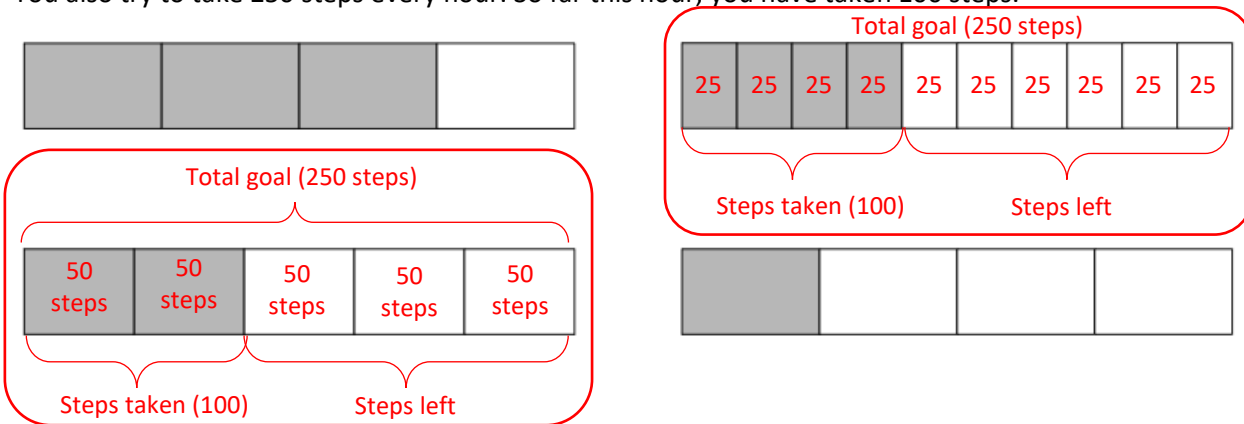|	Number of people	Fraction of people	Percent of people
People who were accepted into the program	40	40/50 or 8/10 or 4/5	80%
People who were not accepted into the program	10	10/50 or 2/10 or 1/5	20%
Total	50	50/50 or 1	100%

Modeling Benchmark Percents and Fractions

5) Your goal is to take 10,000 steps in a day. Yesterday you reached only 60% of that.

Total goal (10,000 steps)

| | 2000 steps | 2000 steps | 2000 steps | 2000 steps | 2000 steps |

Steps taken (60%)   Amount short of goal

Total goal (10,000 steps)

| | 1000 / 1000 | 1000 / 1000 | 1000 / 1000 | 1000 / 1000 | 1000 / 1000 |

Steps taken (60%)   Amount short of goal

Use the model you chose to fill in the information in the table below:

	Number of steps	Fraction of steps	Percent of steps
Steps you took yesterday	6000	6000/10000 or 6/10 or 3/5	60%
Steps by which you fell short of your goal	4000	4000/10000 or 4/10 or 2/5	40%
Total	10000	10000/1000 or 1	100%

6) You also try to take 250 steps every hour. So far this hour, you have taken 100 steps.
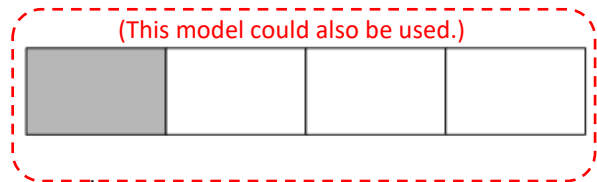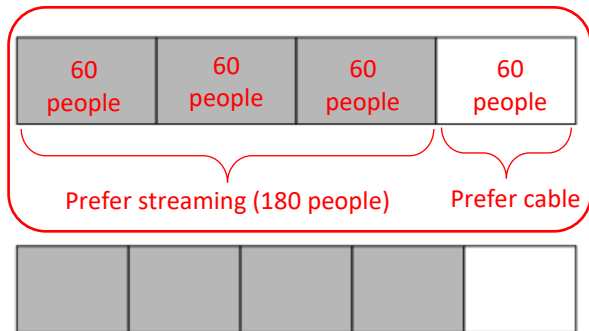
Total goal (250 steps)

| 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |

Steps taken (100)   Steps left

Total goal (250 steps)

| 50 steps | 50 steps | 50 steps | 50 steps | 50 steps |

Steps taken (100)   Steps left

Use the model you chose to fill in the information in the table below:

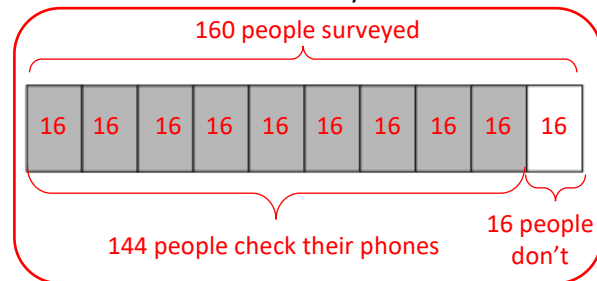|	Number of steps	Fraction of steps	Percent of steps
Steps you have taken so far this hour	100	100/250 or 4/10 or 2/5	40%
Steps you still need to take to make your goal	150	150/250 or 6/10 or 3/5	60%
Total	250	250/250 or 1	100%

Modeling Benchmark Percents and Fractions

7) In a survey, 75% of people said they prefer streaming video to cable. 180 people said they preferred streaming video.

| 60 people | 60 people | 60 people | 60 people |

Prefer streaming (180 people)   Prefer cable

(This model could also be used.)

Use the model you chose to fill in the information in the table below:

	Number of people	Fraction of people	Percent of people
People who prefer streaming video	180	180/240 or ¾	75%
People who do not prefer streaming video	60	60/240 or ¼	25%
Total	240	240/240 or 1	100%

8) 144 out of 160 people surveyed said they check their phones at least five times every hour.

160 people surveyed

| 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |

144 people check their phones   16 people don't

Use the model you chose to fill in the information in the table below:

	Number of people	Fraction of people	Percent of people
People who check their phones at least five times every hour	144	144/160 or 9/10	90%
People who do not check their phones at least five times every hour	16	16/160 or 1/10	10%
Total	160	160/160 or 1	100%

# Modeling Benchmark Percents and Fractions

Challenge scenarios:

Create a model and a table for each of these scenarios.

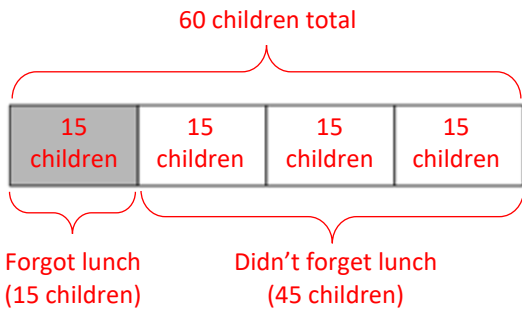1) 80% of the people who signed up for a yoga class showed up. 3 people didn't show.

3 people	3 people	3 people	3 people	3 people

People who showed up   People who didn't
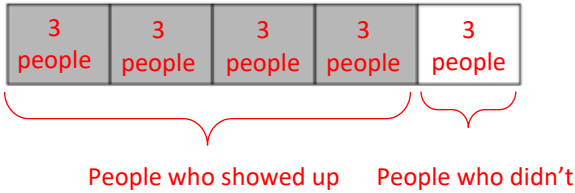
	Number of people	Fraction of people	Percent of people
People who showed up	12	12/15 or 4/5	80%
People who didn't show up	3	3/15 or 1/5	20%
Total	15	15/15 or 1	100%

2) A teacher reported that her class had 75% attendance on Monday. 3 students were absent that day.

3 students	3 students	3 students	3 students

Present (3/4)   Absent (1/4 or 3 students)
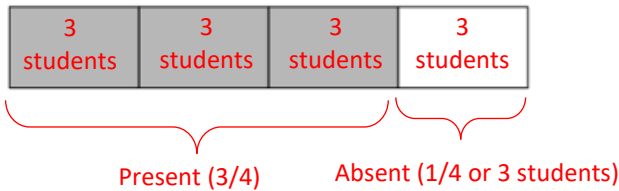
	Number of students	Fraction of students	Percent of students
Present	9	9/12 or ¾	75%
Absent	3	3/12 or ¼	25%
Total	12	12/12 or 1	100%

3) 15 of the 60 children on a field trip forgot to pack a lunch.

60 children total

15 children	15 children	15 children	15 children

Forgot lunch (15 children)   Didn't forget lunch (45 children)

	Number of children	Fraction of children	Percent of children
Forgot lunch	15	15/60 or ¼	25%
Remembered lunch	45	45/60 or ¾	75%
Total	60	60/60 or 1	100%

4) 65% of 160 people surveyed said they eat breakfast every day.

160 people surveyed

16	16	16	16	16	16	8	8	16	16	16

Eat breakfast   Don't eat breakfast
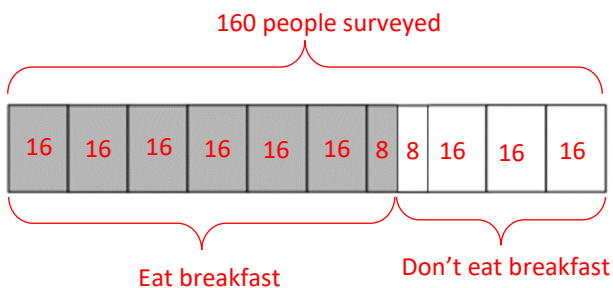
	Number of people	Fraction of people	Percent of people
People who eat breakfast every day	104	104/160	65%
People who don't eat breakfast every day	56	56/160	35%
Total	160	160/160 or 1	100%