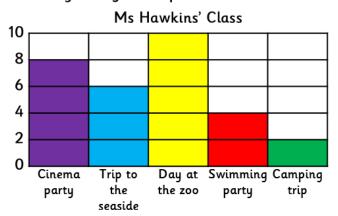
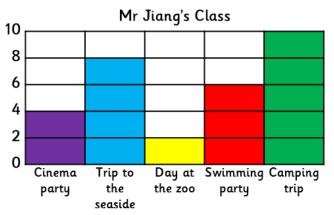
Reasoning and Problem Solving - Statistics

It was the last whole school assembly of the year, and Ms Hawkins and Mr Jiang's Year 3 classes were very excited. They were both in the running for winning Best Overall Attendance, and the prize was a mystery that Headteacher Belding had been talking about all year! After sitting smartly through three songs, twelve awards, and what felt like an eternity, it was time for the big reveal. With a drumroll from the Year 6 class, Mr Belding opened the envelope and smiled.

"Well, well, well! This is a first! The winners are... Ms Hawkins and Mr Jiang's classes! Congratulations, year three! For your prize, I am giving you one full school day to do whatever you like — together!" The school erupted with applause, and the teachers looked cautiously at one another. Their classes were so different! How could they possibly make this work so it was fair?

- 1. To keep the prize realistic, the teachers chose five options and each class had a vote on what they thought the prize should be. Here are the results from each class:
- 1. To keep the prize realistic, the teachers chose five options and each class had a vote on what they thought the prize should be. Here are the results from each class:





What was the most popular choice in each class?

Looking at these bar charts, what do you think the prize will be?

2. Combine the results and create a new bar chart showing the grand total. Remember to give the chart a title and labels.

What is the prize going to be?

| 20 | | | |
|----------------|--|--|--|
| 18 | | | |
| 16 | | | |
| 14 | | | |
| 12 | | | |
| 10 | | | |
| 8 | | | |
| 6 4 | | | |
| | | | |
| 7 ² | | | |
| 0 | | | |
| | | | |

"Brilliant!" exclaimed Ms Hawkins. "We could all use the fresh air!" The classes suggested their favourite seaside activities and Mr Jiang pulled five suggestions out of a hat for them to vote on. "We will use this survey to determine which three activities we will spend our day doing," he explained.

3. The classes were surveyed and Victoria recorded the votes on a tally chart. She used her chart to create a pictogram to display how many votes each activity got.

| Activity | Votes | |
|------------------------|-------------|--|
| Sandcastle competition | #### | |
| Swimming | # | |
| Penny Arcade | ### | |
| Donkey rides | ###III | |
| Kite flying | # | |

| Activity | Votes = 5 |
|------------------------|-----------|
| Sandcastle competition | |
| Swimming | |
| Penny Arcade | |
| Donkey rides | |
| Kite flying | |

| ow many students were surveyed? | | | | | | | |
|---|----------------------------------|--|--|--|--|--|--|
| hat mistake has Victoria made on her pictogram? | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Jse the tally chart recreate Victori | a's pictogram so it is accurate. | | | | | | |
| , | | | | | | | |
| Activity | Votes = 2 | | | | | | |
| | | | | | | | |
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"The results are in: we will be enjoying a sandcastle competition, donkey rides on the beach, and a stop at the penny arcade!" Mr Jiang said enthusiastically. The classes buzzed with excitement! The students began designing their sandcastles and the teachers sat down to figure out the cost of the trip.

5. "We need to go on the trip before Friday because that's the last day of school," Ms Hawkins mumbled, "and we can't go on Monday because that's Sports Day." Use the clues to help you fill in the values in the table below.

| Day | Child ticket | Adult ticket |
|-----------|--------------|--------------|
| Monday | | £1 and 25p |
| Tuesday | 75p | £1 and 60p |
| Wednesday | 84p | |
| Thursday | £1 and 25p | £3 and 50p |
| Friday | | £3 and 50p |
| Saturday | £1 | |

- An adult ticket costs twice the amount of a child ticket on Wednesday.
- A child ticket costs the same price on Friday as it does the day before.
- A child ticket on Monday is half the price of a child ticket on Saturday.
- An adult ticket is three times the price of a child ticket on Saturday.

| 6. Use your completed table to answer the questions below about | the trip to the | seaside. |
|---|-----------------|----------|
| When are the most expensive tickets sold? | | |
| What is the difference in price between an adult and child ticket or | n Thursday? | |
| How much will it cost for 10 adults to accompany Year 3 on a trip on Tuesday? | | |
| According to Ms Hawkins, on what days can the trip take place? | | |
| | | |