**Music and Sports**

Adapted from an Illustrative Mathematics Activity

Is there an association between whether a student plays a sport and whether he or she plays a musical instrument?

Suppose a class of 24 eighth graders were asked:

1. Do you play a sport? (yes or no)
2. Do you play a musical instrument? (yes or no).

Complete each cell in the table below showing the possible counts if there is an association between playing a musical instrument and playing a sport.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Sport | No Sport | Total |
| Musical Instrument |  |  |  |
| No Musical Instruments |  |  |  |
| Total |  |  | 24 |

Complete each cell in the table below showing the possible counts if playing a musical instrument is not associated with playing a sport.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Sport | No Sport | Total |
| Musical Instrument |  |  |  |
| No Musical Instruments |  |  |  |
| Total |  |  | 24 |

Is there an association between playing a musical instrument and playing a sport for the students in our class? To investigate this question, each student in our class should place a tally mark in the appropriate cell on the table provided at the front of the class. Once everyone has recorded a response, count the tallies and complete the table below

|  |  |  |  |
| --- | --- | --- | --- |
| **Our Class** | Sport | No Sport | Total |
| Musical Instrument |  |  |  |
| No Musical Instruments |  |  |  |
| Total |  |  | 24 |

Questions:

1. What proportion of the students in the class play a musical instrument?
2. Of those students who play a sport, what proportion plays a musical instrument?
3. Of those students who do not play a sport, what proportion plays a musical instrument?
4. Based on the class data, do you think there is an association between playing a sport and playing an instrument? Explain your reasoning.
5. On a separate sheet of paper create a graph that would help visualize the association, if any, between playing a sport and playing a musical instrument.