Two Way Table Formative Assessment #1 - Pets and Grade Level

Cluster & Content Standards
What content standards can be addressed by this formative assessment?

NC.8. SP.4 ***Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two way table.***

- ***Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects.***
- ~~***Use relative frequencies calculated for rows or columns to describe possible association between the two variables.***~~

Mathematical Practice Standards
What practice standards can be addressed by this formative assessment?

1. Make sense of problems and persevere in solving them.
6. Attend to precision.

Learning Targets
What learning targets will be assessed?

Complete a two way frequency table using patterns seen in the given data.

Timing:

After instructional task titled "Pets vs Birthdays"

Anticipated Solutions

Successful students will subtract across the first two rows to find the missing numbers. They will then add the columns. Students may try to make up their own numbers. These students should be encouraged to make sure their rows total up correctly. Students may try to add the numbers. Review how find totals.

Solutions:

	Has a Pet	Has no Pet	total
7th grader	102	48	150
8th grader	107	68	175
total	209	116	325

Grade Level vs Pets

Jada surveyed all 7th and 8th graders at her school about whether they had pets. Complete the missing entries in this two-way table.

	Has a Pet	Has no Pet	total
7th grader	102		150
8th grader		68	175
total			

Two Way Table Formative Assessment #2 - Music and Sports

Cluster & Content Standards
What content standards can be addressed by this formative assessment?
NC.8. SP.4 ***Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two way table.***

- ***Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects.***
- ***Use relative frequencies calculated for rows or columns to describe possible association between the two variables.***

Mathematical Practice Standards
What practice standards can be addressed by this formative assessment?
1. Make sense of problems and persevere in solving them.
6. Attend to precision.
8. Look for and express repeated regularity in repeated reasoning.

Learning Targets
What learning targets will be assessed?

- Create a two way table with collected data.
- Determine if there is an association between bivariate data.

Timing: During or after instructional tasks

Anticipated Solutions and Possible Misconceptions (Progression)
Students may not recognize that they are being asked to create a two way table, and they should be encouraged to do so after they attempt other strategies. They are also finding the percent based on columns. They should have practiced finding the percent in both columns and rows.

Solutions:

1.

	Plays a Sport	Does not play a Sport	Total
Plays a musical instrument	6	7	13
Does not play a musical instrument	8	3	11
Total	14	10	24

2. 43%
3. 70%
4. If a student plays a sport it is more likely that they do not play a musical instrument If a student does not play a sport they are more likely to play a musical instrument. Only 43% of those who play a sport play a musical instrument. 70% of those who do not play a sport play a musical instrument.

Music and Sports Assessment

Is there an association between whether a student plays a sport and whether he or she plays a musical instrument? To investigate these questions, Jackson asked each student in his math class to answer these two questions. The results of the survey are below.

Do you play a sport? (yes or no)

Do you play a musical instrument? (yes or no)

1. Summarize the data into a clearly organized table.
2. Of those students who play a sport what percent play a musical instrument?
3. Of those students who do not play a sport, what percent play 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.

student	1	2	3	4	5	6	7	8	9	10	11	12
sport	yes	yes	yes	no	no	yes	no	yes	no	yes	yes	yes
Musical Instrument	no	no	no	no	yes	yes	yes	no	yes	yes	no	yes

student	13	14	15	16	17	18	19	20	21	22	23	24
sport	yes	no	no	yes	yes	yes	no	yes	yes	no	no	no
Musical Instrument	no	no	yes	yes	no	no	yes	yes	yes	yes	no	yes