## Lesson 3: Associations and Relative Frequency Tables

* Let’s explore relative frequency tables

### 3.1: Estimation

What percentage of the graph is labeled C?



1. Record an estimate that is:

| * too low
 | * about right
 | * too high
 |
| --- | --- | --- |
| *
 | *
 | *
 |

1. Explain your reasoning.

### 3.2: Relative Frequency Tables

The relative frequency tables display data collected from 230 students.

|  | 1. participates in afterschool activity
 | * no afterschool activity
 | * total
 |
| --- | --- | --- | --- |
| * arrives home within 2 hours of school dismissal
 | * 3%
 | * 40%
 | * 43%
 |
| * arrives home 2 or more hours after school dismissal
 | * 42%
 | * 15%
 | * 57%
 |
| * total
 | * 45%
 | * 55%
 | * 100%
 |

* 1. What percentage of students participate in after-school activities? How many students participate in after-school activities?
	2. What percentage of students arrive home 2 or more hours after dismissal? How many students arrive home 2 or more hours after school dismissal?

|  | 1. aspiring professional athlete
 | * aspiring STEM career
 | * total
 |
| --- | --- | --- | --- |
| * prefer physical education
 | * 77%
 | * 23%
 | * 100%
 |
| * prefer math
 | * 18%
 | * 82%
 | * 100%
 |

* 1. What percentage of students who prefer math aspire to have a career in STEM?
	2. What percentage of students who prefer physical education aspire to have a career in STEM?
	3. Are these two percentages close?
	4. Is there evidence of an association between students’ career aspirations and subject preference? Explain your reasoning.

|  | 1. 9th grade
 | * 12th grade
 |
| --- | --- | --- |
| * curfew
 | * 95%
 | * 90%
 |
| * no curfew
 | * 5%
 | * 10%
 |
| * total
 | * 100%
 | * 100%
 |

* 1. Of the students in 12th grade, what percentage have a curfew?
	2. Of the students in 9th grade, what percentage have a curfew?
	3. Is there evidence of an association between students’ grade level and whether they have a curfew? Explain your reasoning.

### 3.3: Associate Your Variables

1. Invent a pair of variables that you think will have an association. Explain your reasoning.
2. Invent a pair of variables that you think will not have an association. Explain your reasoning.



© CC BY 2019 by Illustrative Mathematics®