

Math 6+: Data, Statistics, and Probability

Probability and Sample Spaces

Probability

Students	Learning Continuum Statements:
Students:	RIT 161-170: <ul style="list-style-type: none">Identifies a simple event given the likelihood of the event as more likely, less likely, neither likely nor unlikely, impossible, or certain
Students:	RIT 171-180: <ul style="list-style-type: none">Identifies a simple event given the likelihood of the event as more likely, less likely, neither likely nor unlikely, impossible, or certain
Students:	RIT 181-190: <ul style="list-style-type: none">Describes the likelihood of simple events occurringIdentifies a simple event given the likelihood of the event as more likely, less likely, neither likely nor unlikely, impossible, or certain
Students:	RIT 191-200: <ul style="list-style-type: none">Describes the likelihood of simple events occurringDetermines theoretical probabilities of simple eventsIdentifies a simple event given the likelihood of the event as more likely, less likely, neither likely nor unlikely, impossible, or certainMakes predictions based on theoretical probabilities of simple events
Students:	RIT 201-210: <ul style="list-style-type: none">Describes the likelihood of simple events occurringDetermines theoretical probabilities of simple eventsIdentifies a simple event given the likelihood of the event as more likely, less likely, neither likely nor unlikely, impossible, or certainIdentifies the likelihood of a simple event as more likely, less likely, neither likely nor unlikely, impossible, or certain, given the probability of the eventMakes predictions based on theoretical probabilities of simple events
Students:	RIT 211-220: <ul style="list-style-type: none">Describes the likelihood of simple events occurringDetermines experimental probabilities of simple eventsDetermines marginal probabilities using a two-way frequency tableDetermines the probability of the complement of an eventDetermines theoretical probabilities of simple eventsIdentifies the likelihood of a simple event as more likely, less likely, neither likely nor unlikely, impossible, or certain, given the probability of the eventMakes predictions based on theoretical probabilities of simple eventsOrders events from least likely to most likely given probabilities

Students:**RIT 221-230:**

- Describes the likelihood of compound events occurring
- Determines experimental probabilities of simple events
- Determines marginal probabilities using a two-way frequency table
- Determines the odds of simple events
- Determines the probability of the complement of an event
- Determines theoretical probabilities of simple events
- Identifies the likelihood of a simple event as more likely, less likely, neither likely nor unlikely, impossible, or certain, given the probability of the event
- Makes predictions based on experimental probabilities of simple events
- Makes predictions based on theoretical probabilities of simple events
- Orders events from least likely to most likely given probabilities
- Understands the concept of independence in situations
- Writes proportions to make predictions based on experimental probabilities

Students:**RIT 231-240:**

- Describes the likelihood of compound events occurring
- Determines conditional probabilities of events without replacement
- Determines experimental probabilities of simple events
- Determines joint probabilities using a two-way frequency table
- Determines probabilities of compound independent events
- Determines the probability of the complement of an event
- Determines theoretical probabilities of simple events
- Develops probability distributions from empirical data
- Identifies the likelihood of a simple event as more likely, less likely, neither likely nor unlikely, impossible, or certain, given the probability of the event
- Makes predictions based on experimental probabilities of simple events
- Modifies sample space to change the probability of an event
- Orders events from least likely to most likely given probabilities
- Understands the concept of independence in situations

Students:**RIT 241-250:**

- Determines conditional probabilities of events without replacement
- Determines experimental probabilities of simple events
- Determines joint probabilities using a two-way frequency table
- Determines probabilities of compound independent events
- Determines probabilities using geometric models
- Determines theoretical probabilities of simple events
- Develops probability distributions from empirical data
- Makes predictions based on experimental probabilities of simple events
- Makes predictions based on probability distributions

Students:

RIT 251-260:

- Determines conditional probabilities of compound events using relative frequencies
- Determines probabilities of compound dependent events
- Determines probabilities of compound independent events
- Determines probabilities using geometric models
- Determines probabilities using the Addition Rule of probability
- Determines probabilities using the general Multiplication Rule of probability
- Makes predictions based on theoretical probabilities of compound events

Students:

RIT 261-270:

- Determines conditional probabilities of compound events using relative frequencies
- Determines conditional probabilities using a two-way frequency table
- Determines probabilities of compound dependent events
- Determines probabilities of compound independent events
- Determines probabilities using geometric models
- Determines probabilities using the general Multiplication Rule of probability

Students:

RIT 271-280:

- Determines conditional probabilities of compound events using relative frequencies
- Determines probabilities using the general Multiplication Rule of probability