

# Mathematics Class Slides

Bronx Early College Academy

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12 November 2019

### 3.0 Exploration project paper schedule

3.1 Exploration paper student work time (1) 12 Nov

3.2 Introduction to probability 13 Nov

3.3 Probability as fractions 14 Nov

3.4 Exploration paper student work time (2) 15 Nov

3.5 Sample spaces & Venn diagrams 18 Nov

3.6 Exploration paper student work time (3) 19 Nov

3.7 Frequency table, cumulative graphs review; re-Quiz 20 Nov

3.8 Cumulative graphs, regression review 21 Nov

3.9 Exploration paper student work time (4) 22 Nov

## GQ: How do we employ mathematics to explore a topic?

CCSS: MP5 attend to precision

originally Thursday 31 Oct

### Exploration: Schedule and deadlines

1. Topic selection - Monday November 4th
  - 1.1 Independent work on introduction, data, mathematics - Nov 11
  - 1.2 Complete design of methods, collect data - Nov 15
2. Complete paper for peer review - Friday November 22nd
3. Complete paper for grade - Friday December 6th
4. Final paper - Friday January 17th

## GQ: How do we use mathematics to explore a topic?

CCSS: MP5 attend to precision

3.1 Tuesday 12 Nov

### Work on exploration papers

1. Inputs: what data will you use and how will you get it?
2. What mathematics will you apply (find the textbook chapter)
3. Outputs: What results will you use to answer your aim?
4. Start drafting and re-drafting your introduction (aim, rationale, personal engagement)

Homework: Develop exploration

## GQ: How do we use mathematics to explore a topic?

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3.2 Wednesday 13 Nov

### Do Now Skills check page 205

1. Treat probabilities as fractions between zero and one
2. Use tables to organize data

Afterschool today; parent conferences tomorrow 4:00-7:00, Friday

Lesson: theoretical and experimental probabilities, notation

Sleeping situation

Homework: Read and evaluate sample exploration paper according to criteria pp. 737-740

## GQ: How do we quantify uncertainty?

CCSS: MP5 attend to precision

3.3 Thursday 14 Nov

### 2.16 Do Now: Dice probability

1. probability tables (pdf)

Scoring an exploration paper

Lesson: Probability calculations

Homework: Textbook exercises 5A p. 210-211; exploration paper

## GQ: How do we use mathematics to explore a topic?

CCSS: MP5 attend to precision

3.4 Friday 15 Nov

### Work on exploration papers

1. Inputs: what data will you use and how will you get it?
2. What mathematics will you apply (find the textbook chapter)
3. Outputs: What results will you use to answer your aim?
4. Start drafting and re-drafting your introduction (aim, rationale, personal engagement)

Homework: Develop exploration

## GQ: How do we organize the event space for analysis?

CCSS: MP5 attend to precision

3.5 Monday 18 Nov

### 2.16 Do Now: Express each probability as a fraction

1. Rolling a twelve with two dice
2. Drawing an ace from a deck of cards
3. Having a birthday on a weekday
4. Two students in a class of 30 have the same birthday

Review homework problems 5A p. 211

Lesson: Venn diagrams and sample spaces

Homework: Textbook exercises 5B p. 215; exploration paper



## GQ: How do we use mathematics to explore a topic?

CCSS: MP5 attend to precision

3.6 Tuesday 19 Nov

### Work on exploration papers - quiet, independent work

1. Organize your inputs or data. Do not worry about formatting it yet.
2. Apply mathematics, probably with technology. Use pencil & paper for equations for now (reference the textbook)
3. Study your initial results. Write down what you find!  
Brainstorm, outline, type up descriptions, findings, reflections.  
Tie back to your aim.
4. Re-write your introduction (aim, rationale, personal engagement). Draft the conclusion (perhaps rough).

Homework: Develop exploration

## GQ: How do we display and interpret cumulative data?

CCSS: MP5 attend to precision

3.7 Wednesday 20 Nov

### 2.16 Do Now: Handout practice of stats problems

1. Frequency tables, univariate summary statistics
2. Bivariate data analysis

Review stats quiz problems

Lesson: Cumulative plots

Exit note re-quiz: Univariate summary statistics

Homework: Statistics Pre-exam; Exploration paper

## GQ: How do we display and interpret cumulative data?

CCSS: MP5 attend to precision

3.8 Thursday 21 Nov

### 2.16 Do Now: Handout practice of stats problems

#### 1. Bivariate data analysis

Review stats Pre-exam problems

Homework: Exploration paper

## GQ: How do we use mathematics to explore a topic?

CCSS: MP5 attend to precision

3.9 Friday 22 Nov

Submit exploration papers for peer review - quiet, independent work

1. Organize and print your inputs or data. Formatting is not critical, but label it clearly (by hand is fine).
2. Check mathematics. Include spreadsheets in submission to peer. Pencil & paper for equations are fine, but organize and write clearly.
3. Explain the results clearly. Complete descriptions, findings, reflections. Tie back to your aim.
4. Lock down your introduction (aim, rationale, personal engagement) conclusion (which must tie back to aim).

Homework: Study for statistics exam Monday

Read peer paper, mark with comments, complete checklist (due Tuesday)