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
2. In class work sessions (you must work at home too)
   - 2.1 Independent work on introduction, data, mathematics - Nov 11
   - 2.2 Complete design of methods, collect data - Nov 15
   - 2.3 Apply mathematics, write up methods & results - Nov 19
   - 2.4 Finalize peer review paper, print - Nov 22
3. Complete paper for peer review - Friday November 22nd
4. Complete paper for grade - Friday December 6th
5. 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?

CCSS: MP5 attend to precision 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)