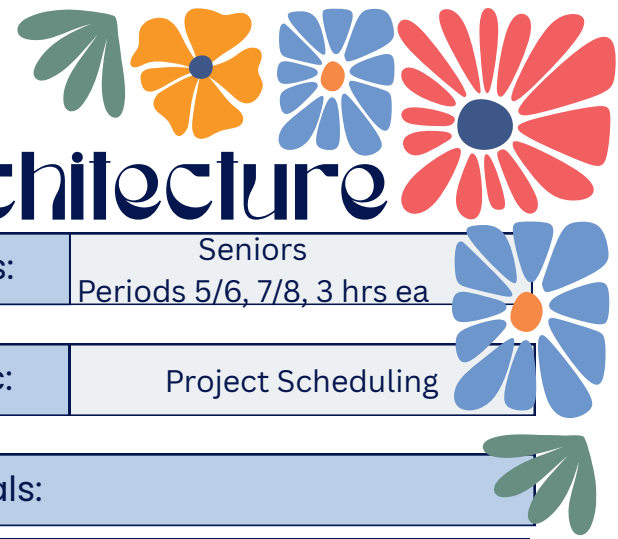


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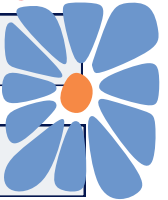


Date:	TBD
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Class:	Seniors Periods 5/6, 7/8, 3 hrs ea
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Subject:	Architecture
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Topic:	Project Scheduling
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Lesson Focus and Goals:

The focus of this lesson is to introduce the students to the concept of exploring typical weather patterns through data science. The primary goals include:

- ☐ understanding the impact of adverse weather conditions to a project schedule.
- ☐ learning how to analyze data related to typical weather patterns using programming.
- ☐ developing critical thinking skills during data interpretation and making data informed adjustments to project schedules.
- ☐ communicating schedule and cosupdates to all stakeholders.

Objectives:

The student evaluates and adjusts plans and schedules to respond to unexpected events and conditions.

The student is expected to:

- ☐ incorporate potential job disruptions into planning timelines;
- ☐ identify potential events and conditions that disrupt the completion of a job;
- ☐ solve situational problems involved with unexpected events and conditions;
- ☐ adjust plans and schedules to meet project needs;
- ☐ modify existing plans and schedules to reflect an unexpected change;
- ☐ identify and assess critical situations as they arise to resolve issues with the best solution; and
- ☐ present a project update to track changes necessitated by unexpected events and conditions.

Materials:

Computer with internet access, Google Colab access, Project Schedule Examples, Communication Log examples, Weather datasets, Video by Philip Helmes, Activity Templates

Activities:

Day 1

Launch: Materials Challenge
Introduce 3 different climates
Compare building materials (*Each 1 Teach 1*)
* reason, cost per unit, treatment, storage
* common destructive weather events in each
* present findings (Engagement Grade)

Day 2

Introduce Weather Data and Google Colab
Discuss usefulness to Project Scheduling
Work through example analysis together
Students analyze respective datasets

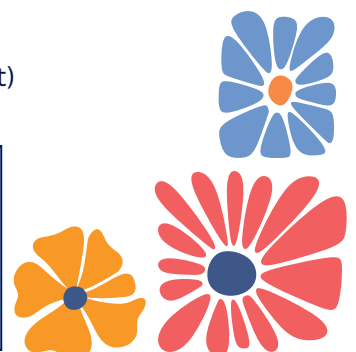
Homework: Watch Philip Helmes video, take notes, be prepared to report

Day 3 (into Day 4)

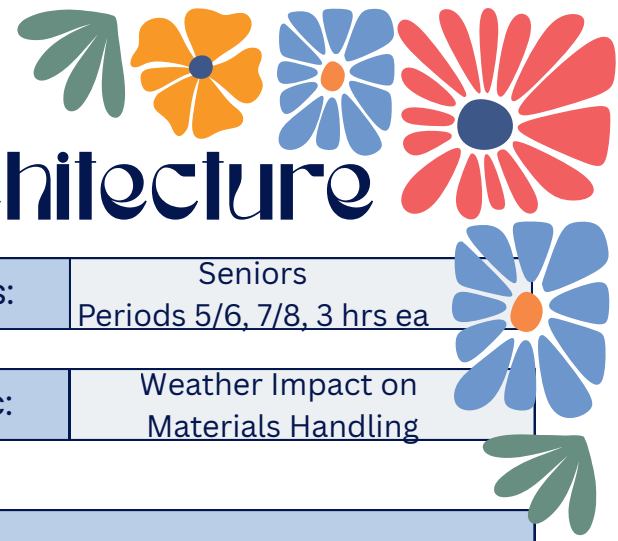
Share homework knowledge (*Total Recall*) (Assessment Grade)
Example Project schedule, communication log (*Fan Favorite*)
Students begin to create Project Schedules (Pairs or Groups)
Presentation requirements laid out
Schedule Presentation Prep
Schedule Presentation (Assessment)

Assessments:

1. Observation throughout activities
2. Total Recall activity about video homework
3. Presentation



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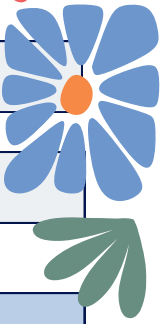


Subject:	Architecture
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Class:	Seniors Periods 5/6, 7/8, 3 hrs ea
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Date:	Day 1 (3 hours)
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Topic:	Weather Impact on Materials Handling
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Lesson Overview:

Part 1: Launch - Materials Challenge (1-2-4-Whole Group Strategy)

- Discuss importance of materials handling for preventing waste
- Introduce three different locations with climates requiring different materials and materials handling
 - Each One Teach One strategy: Students will start in a group with the same color-coded question and work together to answer it. Then students will rotate between classmates with different questions and each will teach the other the answer to their different questions, then switch papers, and repeat the process until each student has acquired answers to all questions.
 - Students will group together based on current color-coded question, discuss and present their findings about materials handling in that particular environment.
- Exit Ticket: Think It Up exercise to reinforce learning

Materials:

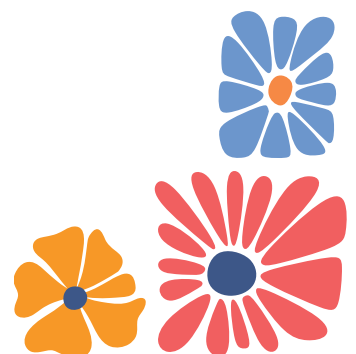
Computer with internet access
Activity templates

- Each One Teach One
- Think It Up

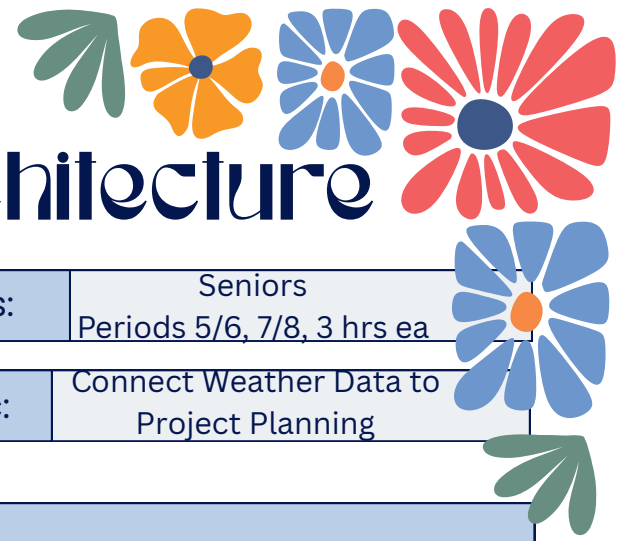
Pen or pencil
Video by Philip Helmes

Day 1 TEKS Objectives

10(B) identify potential events and conditions that disrupt the completion of a job;



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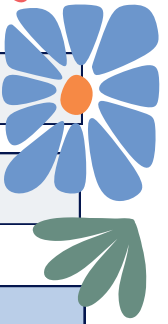


Subject:	Architecture
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Class:	Seniors Periods 5/6, 7/8, 3 hrs ea
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Date:	Day 2 (3 hours)
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Topic:	Connect Weather Data to Project Planning
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Lesson Overview:

Part 2: Introduce Weather Dataset

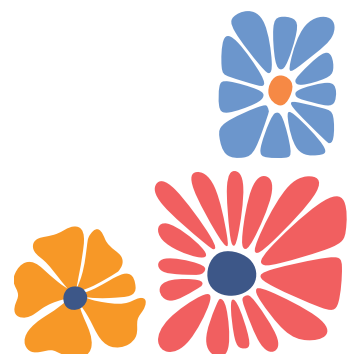
- Discuss usefulness of data for project scheduling
- Specify how data will be analyzed, information to be extracted (frequency of disruptive weather in each environment)
- Introduce students to Google Colab
- Walk students through analysis of example dataset using Google Colab
- Interpret data together
- Discuss impact of information on project scheduling
- Assign homework: Watch [Philip Helmes - Effective Construction Scheduling](#) video, take notes (to be collected), be prepared to share takeaways.

Materials:

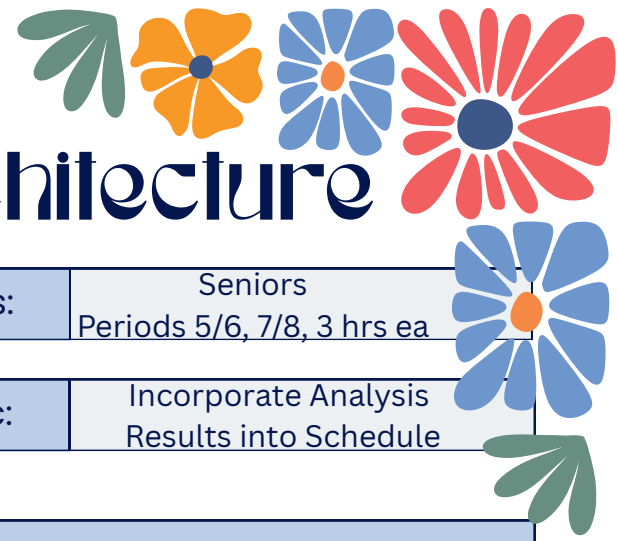
Computer with internet access and Google Colab
Pen or pencil
Video by Philip Helmes

Day 2 TEKS Objectives

9(A) identify resources and materials required for a specific project, including time management [...] in order to effectively plan;
10(B) identify potential events and conditions that disrupt the completion of a job;



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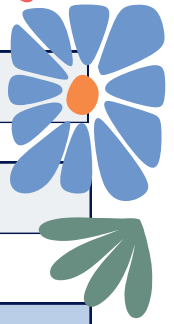


Subject:	Architecture
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Class:	Seniors Periods 5/6, 7/8, 3 hrs ea
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Date:	Days 3 - 4 (6 hours)
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Topic:	Incorporate Analysis Results into Schedule
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Lesson Overview:

Part 3: Share homework knowledge (Total Recall Strategy) (Assessment Grade)

- Introduce example Project schedule, communication log (Fan Favorite Strategy)
- Discuss how analysis results can impact project plan
- Consider ways to incorporate expected and unexpected weather events into schedule (25/10 Strategy)
- Presentation and schedule requirements laid out
 - Students create and defend Project Schedules and Presentations (Pairs or Groups)
- Project Schedule Presentations (Assessment)

Materials:

Computer with internet access
Activity supplies

- Total Recall - Notebook Paper
- 25/10 Crowd-Courcing - Notecards
- Pen or pencil

Day 3-4 TEKS Objectives

9(B) estimate correct amounts of required resources and materials;
9(C) evaluate the feasibility of alternative suggestions;
10(A) incorporate potential job disruptions into planning timelines;
10(B) identify potential events and conditions that disrupt the completion of a job;
10(D) adjust plans and schedules to meet project needs;
10(G) present a project update to track changes necessitated by unexpected events and conditions.
12(A) manage personal and professional schedules and contact information;

