



iPrep.math

2013-2014

PRINCIPALS' INSTITUTE

RE-IMAGINE EDUCATION



- Personalized Learning



LEADING IN THE 21st CENTURY



Creative – Sometimes meeting the needs of all students takes different approaches that have not been used before.

- **Communicator** – They are able to communicate to their staff the vision and purpose of innovative initiatives.

Critical Thinker – We have to look at these ideas and evaluate the **long term** impact on our schools and students, and how they will ultimately benefit them. Impact can not be assessed without fidelity to the initiative.

- **Creates Challenge** - They push forward for the sake of students and provide ways for staff to be continuous learners.
- **Builds Community** – Community is not about connecting everyone, but it is connecting those to the right people.
- **Visionary** – It is not only essential that we are able to develop this vision, but that we are able to effectively share it with our community.
- **Caring** – Without this, none of the others matter. Students and staff need to know that they are cared for as people. This is the foundation our schools need to be built upon.

The 21st Century Principal, November 20, 2010

By George Couros



RE-IMAGINE LEARNING



Small Group
Intervention
/
Enrichment

Project-
Based
Learning

**COMPLEX
PROBLEM
SOLVING**

Student
Collabora-
tion

Adaptive
Software

Student-
Centered
teaching



**PERSONALIZED
STUDENT LEARNING**



21st CENTURY SKILLS

TRANSFORMED CURRICULUM

INFUSION

Technology

Real World

Innovation

21

S
K
I
L
S

Critical Thinking,
Problem Solving,
Reflection

Personal, Social,
Living, Career and
Ethical

Life Long Learning,
Application, Creation,
Innovation

Digital Literacy,
Multimedia, and
Technology

Adopted
Standards and
Subject Areas

**21
Century
Skill
Plan
Of
Action**

PD

Student
Centered

Planning

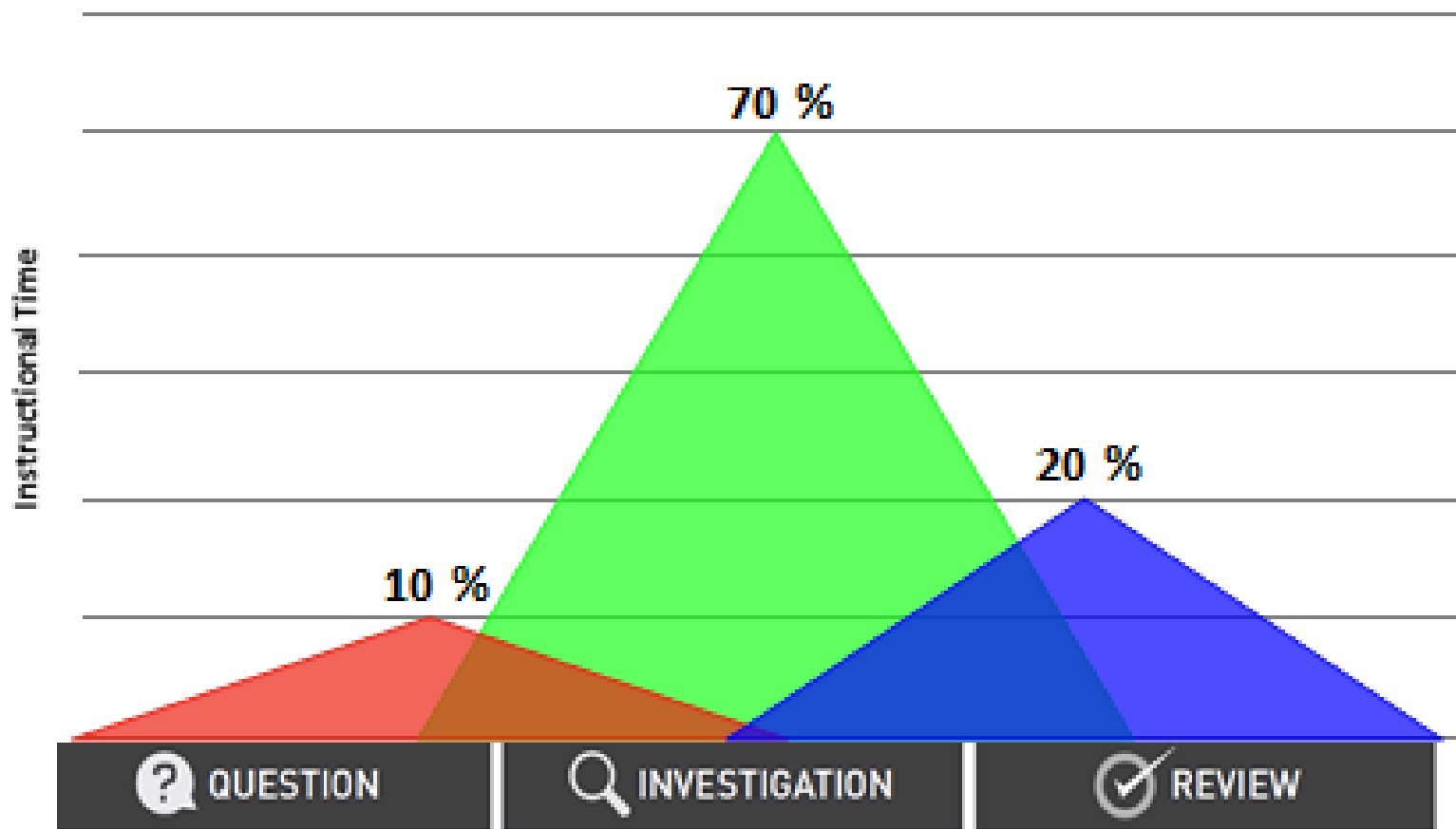
Culture

Assessment

Resources



Instructional Framework



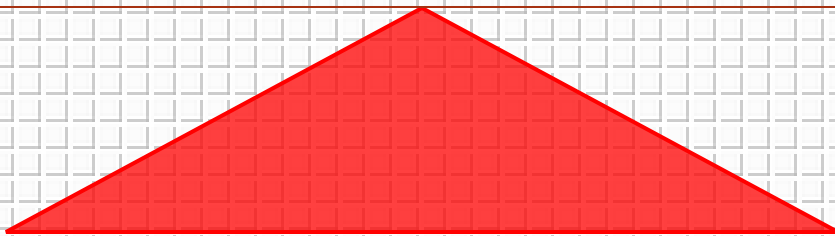
INSTRUCTIONAL TIME



? QUESTION

- Driven by a relevant essential question.
- Aligned to the district's pacing guide and NGSSS/CCSS.
- Embedded in the module to guide student investigation.
- Generate interest by offering a creative grabber or hook using images, videos, music, etc.

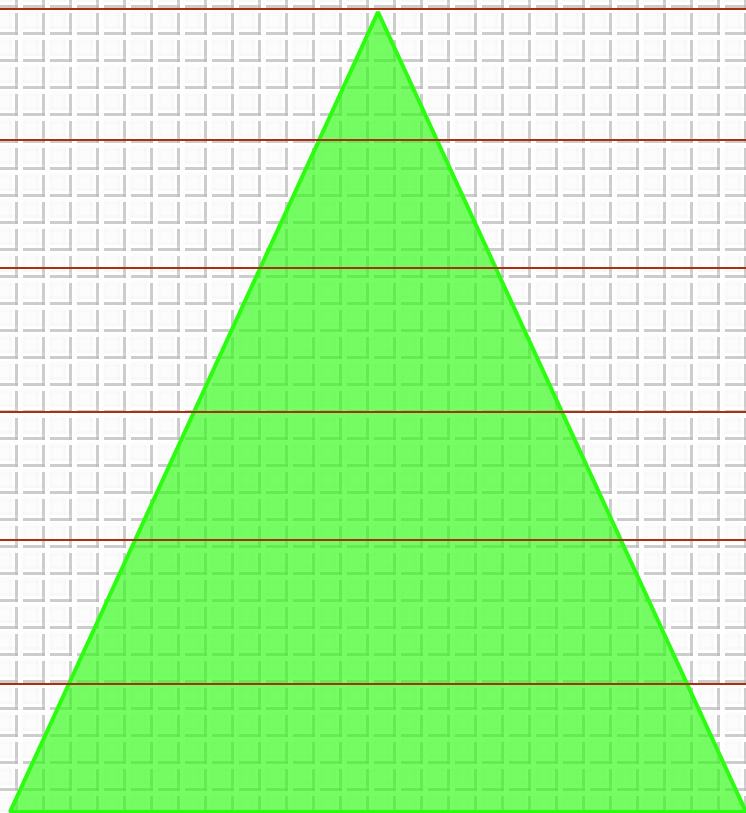
10%



INSTRUCTIONAL TIME



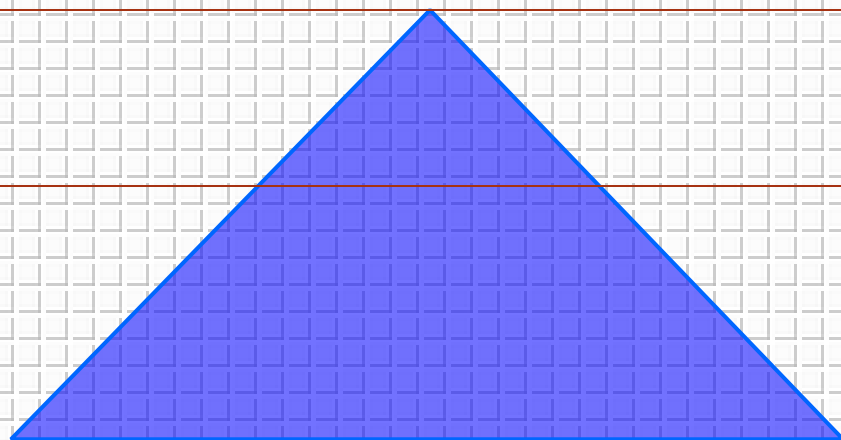
70%



INVESTIGATION

- **Let the learning begin!** Students work individually or in collaborative groups to find answers online to the essential question and teacher selected, rigorous, real-world problems.
- Students take part in Project Based Learning (PBL) activities in order to demonstrate a deeper understanding of the content.
- Teachers are facilitators and “roaming conductors” available to guide students when needed.
- Students request a workshop with the teacher(s) in order to further personal or group understanding.

INSTRUCTIONAL TIME



REVIEW

- Students reflect and review the day's progress with the teacher(s).
- Teachers facilitate a discussion about the essential question and the student's investigation process.
- Teachers engage students in their own review by asking questions such as: What would they do differently next time, both individually and as a group? What did they think they or others did really well?
- Teachers gain qualitative data from these debriefs to guide future student tasks, assignments, and if needed remediation or acceleration.

COMPONENTS OF THE INSTRUCTIONAL FRAMEWORK

Students can request explicit instruction via workshops or teachers can pull data-driven small groups

Students spend most of the Instructional Time Investigating

Students take part in Project Based Learning (PBL)

Students are guided by essential questions and Modules

Students reflect and review the day's progress with the teacher(s)

Daily data analysis (student grouping is data-driven)

Team teachers are roaming conductors and facilitators

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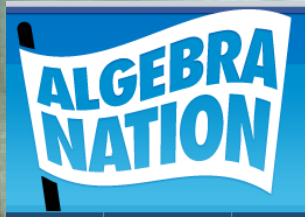
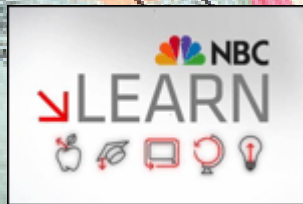
ELEMENTS OF **i**PREP.MATH PLANNING: **i**PLAN

- **Daily Pulling and Disaggregation of Data**
- **Personalize instruction based on data (e.g., WWW Form)**
- **Planning of Project-Based Learning (PBL) activities**
- **Planning of iModules**
- **Alignment of District Pacing Guides to iModules**
- **Planning of team teaching roles**



DIGITAL INSTRUCTIONAL TOOLS

Explicit Teaching Embedded in iModules Through:



Freeing up the three teachers to:

- *Provide personalized, data-driven small group instruction.
- *Probe student understanding.
- *Lead student requested workshops.

PLANNING FOR INVESTIGATION: iMODULE

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School Name:
iModule / Lesson Plan



Teachers:			
Grade(s):	Period(s):		
iModule:			
Focus:			
Essential Question:			
Start Date:	Deadline:		

Goals to accomplish / Activities to be completed:

- Need a workshop? Seek one of your teachers.

Assessment:	•
Follow Up:	•

Intervention	Enrichment / Advancement
This portion of the iModule / Lesson Plan should not be visible to the students.	This portion of the iModule / Lesson Plan should not be visible to the students.

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iModule / Lesson Plan

Teachers:	6x3people		
Grade(s):	7th	Period(s):	1, 2, 3, & 4
iModule:	1 Adding and Subtracting Integers / Rational Numbers.		
Focus:	MA.7.A.3-1 Use and justify rules for adding, subtracting, multiplying, dividing and finding the absolute value of integers. MA.7.A.3-2 Add, subtract, multiply and divide integers, fractions and terminating decimals, and perform exponential operations with rational bases and whole number exponents including solving problems in everyday contexts.		
Essential Question:	How do the rules of adding and subtracting integers help us in solving real-life problems?		
Start Date:	08/21/2019	Deadline:	09/03/2019

Goals to accomplish / Activities to be completed:

- Need a workshop? Seek one of your teachers.
- View video posted on Edmodo on How to Add & Subtract Integers.
- Complete Carnegie Learning (iMATH) Software Module (Island) 1, Units 1-5.
- Complete Carnegie Learning Student Text Problem Solving lessons 4.1, 4.2, 4.3, 4.4, & 4.5 Problem 1.
- Complete Quiz - Adding & Subtracting with Integers / Rational Numbers (Posted on Edmodo).
- Project-Based Learning (PBL) - As Easy as Two, Four, Negative Six
 - PBL Idea - Your team (group of 6) has been hired by a children's educational film company. They are looking for a short film that creatively explains how to add and subtract integers, they do not want an explanation; they want a narrative. Your team's job is to come up with a story that visually represents the reasons behind the rules for adding and subtracting integers.
 - PBL Details - Create a video that creatively explains through a narrative how the rules of adding and subtracting integers work.
 - Use digital device / media of your choice to create a storyboard, a visual representation of your planned video.
- Post PBL video and storyboard on the Assignment Link on Edmodo.

Assessment:	<ul style="list-style-type: none"> • PBL project. • Quiz - Adding & Subtracting with Integers / Rational Numbers (located in Edmodo).
Follow Up:	Reflection - Complete the Exit Slip located in Edmodo: What would you do differently? What did you do well during the process of creating and completing the PBL?



Intervention	Enrichment / Advancement
This portion of the iModule / Lesson Plan should not be visible to the students. <ul style="list-style-type: none"> • Refer to WWW Form • Reflex Math to build fluency. • Workshops: Subtracting Integers, Problem solving strategies. 	This portion of the iModule / Lesson Plan should not be visible to the students. <ul style="list-style-type: none"> • Refer to WWW Form • Begin working on iMATH Module (Island) 1. • Begin working on the next iModule.

PLANNING FOR INVESTIGATION: iMODULE



iModule: Area of rectangles, triangles, and trapezoids

Focus: MA.6.G.4.2

Essential Question: How do you find area of rectangles, triangles, and trapezoids?

Start Date: June 21, 2013

Deadline: June 28, 2013



PLANNING FOR INVESTIGATION: iMODULE

Activities to be completed:

- Mathia Software Unit 39
- Warm-ups – Student text 13.2, 13.3, 13.4
- Problem Solving – Student Text 13.2, 13.3, 13.4 problem 1
- Project Based Learning – Rug Distributor
 - Create a digital rug in the shape of a triangle, rectangle, or trapezoid (your choice). You can create the rug using Microsoft Word, Excel, or Power Point. The rug must fit the area of your customer’s desired space at their home (provided by teacher).
 - Research local rug companies to determine a price for your customer. Write an explanation of how your group priced the rug.
 - Post your rug on Edmodo.

Assessment: Project Based Learning

Follow-Up: Reflect on the essential question, and post what you would do differently and what you did well on Edmodo.

PROGRESS MONITORING

- **Daily progress monitoring reports of the data produced by the adaptive software (MATHia)**
- **Benchmark testing within the software program**
- **District Topic Assessments (administered by the end of each quarter as students complete their topics of study)**
- **District Interim Assessments (administered within the testing window)**
- **Project-Based Learning (PBL) activities**
- **Teacher-created assessments**



PLANNING FOR INVESTIGATION: PERSONALIZATION



Module: _____

W _{hat}	W _{ho}	W _{hy}

WHAT: THE INITIAL ACTIVITY THE TEACHER(S) SELECTS THE STUDENT(S) TO BEGIN WITH

WHO: WHICH STUDENTS WILL BEGIN ON THE INITIAL ACTIVITY -> SELECTED BY THE TEACHER(S)

WHY: WHAT DATA WAS USED (QUANTITATIVE OR QUALITATIVE) TO DRIVE THE DECISIONS OF INITIAL PLACEMENT AND GROUPING

PLANNING FOR INVESTIGATION: PERSONALIZATION

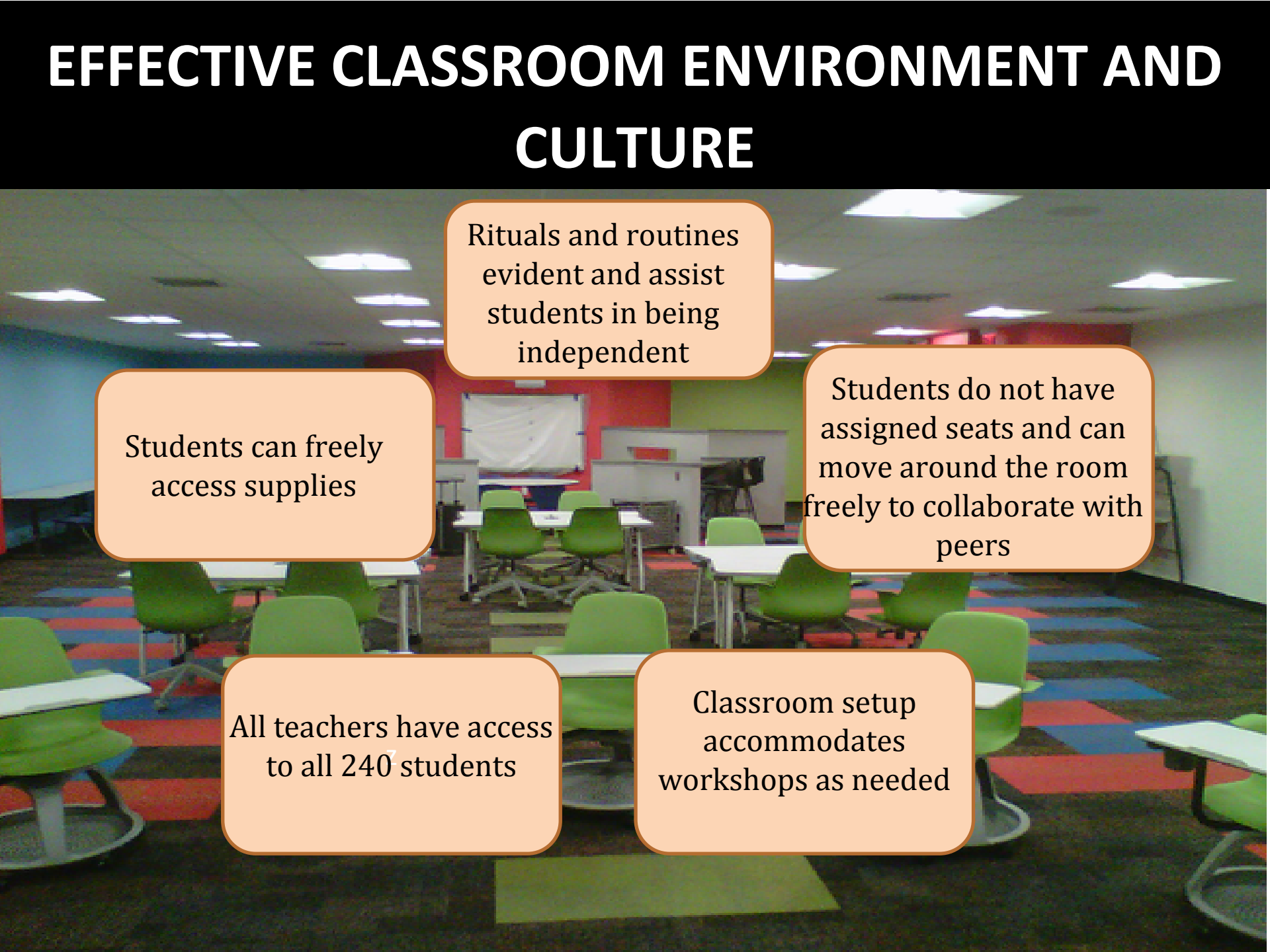
W _{hat}	W _{ho}	W _{hy}
Teacher-Led Workshop	Student Student Student	Students in need of a workshop based on assessment data
	Student	

IMPLEMENTATION FIDELITY RUBRIC



IMPLEMENTATION FIDELITY RUBRIC		LIMITED	EMERGING	EFFECTIVE	Comments and Evidence
ID	Subdimensions	Little to No Evidence of Implementation of iPrep Math Program Components	Some Evidence of Implementation of iPrep Math Program Components	Strong Evidence of Implementation of iPrep Math Program Components	
		1	2	3	
1	Classroom Environment and Culture	<ul style="list-style-type: none"> Tools and materials are accessible and not utilized. Tools and materials are not available. Few routines and procedures are established to facilitate student responsibility, ownership, and independence. Physical classroom arrangement supports teacher-directed, with some student-to-student interactions (e.g., teacher rarely moves around the room to observe and confer with students). Students have little to no access to learning hubs (e.g., students are arranged in rows or assigned seats, student collaboration is not promoted or evidenced). Teachers do not have access to all students (e.g., student-to-teacher ratio is high). 	<ul style="list-style-type: none"> Appropriate tools and materials are accessible and used by some students to support learning. Some routines and procedures are established to facilitate student responsibility, ownership and independence. Physical classroom arrangement intermittently supports student-to-student interactions and teacher-to-student workhubs as needed (e.g., teacher sometimes moves around the room to observe and confer with students). Students have limited access to all learning hubs. Teachers have limited access to all students. 	<ul style="list-style-type: none"> Appropriate tools and materials accessible and used by all students to support learning and independent work. Clear and consistent routines and procedures are established to facilitate student responsibility, ownership and independence. Physical classroom arrangement allows for flexibility in accommodating each student and their learning needs and supports both student-to-student interactions and teacher-to-student workhubs as needed (e.g., teacher moves around the room to observe and confer with students). Students have access to all learning hubs and teachers have access to all students. 	
	Standards, Learning Targets and Teaching Points	<ul style="list-style-type: none"> Teachers are not on track to complete course expectations (according to district pacing and state standards). During instructional time, teacher has difficulty with compressing the following: Modules, Project-Based Learning (PBL) activities, adaptive software, rigorous test, complex problem solving and instructional technology resources (e.g., the learning targets and tasks are not clearly articulated, linked to standards, embedded in instruction, and understood by all students). Little preparation for lesson and materials. Criteria for success is not clear to students and/or no evidence that students are able to understand and apply learning in context. 	<ul style="list-style-type: none"> Teachers are somewhat on track to complete course expectations (according to district pacing and state standards). Instructional time includes some of the following: Modules, Project-Based Learning (PBL) activities, adaptive software, rigorous test, complex problem solving and instructional technology resources (e.g., the learning targets and tasks are clearly articulated, linked to standards, embedded in instruction, and understood by some students). Some preparation for lesson and materials, but the criteria for success is not clear to all students and/or some evidence that students are able to understand and apply learning in context. 	<ul style="list-style-type: none"> Teachers are on track to complete course expectations (according to district pacing and state standards). Instructional time is maximized to meet the lesson objectives and includes all of the following: Modules, Project-Based Learning (PBL) activities, adaptive software, rigorous test, complex problem solving and instructional technology resources (e.g., the learning targets and tasks are clearly articulated, linked to standards, embedded in instruction, and understood by all students). Prepares lesson and materials in advance with attention to intervention and enrichment/adancement activities with clear criteria for success and evidence that students are able to understand and apply learning in context. 	
	Curriculum	<ul style="list-style-type: none"> Students spend less than 1.5 hours in a two week period on the Carnegie Learning adaptive software. Instructional materials and tasks are not always appropriately challenging and supportive for students, aligned with the learning targets and content area standards, and are not culturally and academically relevant. Teacher provides instruction to the learner and understands that the learner is dependent on them to support their learning (e.g., Teacher determines how and what students learn). 	<ul style="list-style-type: none"> Students spend 1.5 - 2.5 hours in a two week period on the Carnegie Learning adaptive software. Most instructional materials and tasks are appropriately challenging and supportive for students, aligned with the learning targets and content area standards, and are culturally and academically relevant. Teacher provides instruction to the learner, but supports groups of learners who are reliant on them to support their learning (e.g., Teacher determines what students learn, but learner is given a choice on how to demonstrate their learning). 	<ul style="list-style-type: none"> Students spend 2.5 or more hours in a two week period on the Carnegie Learning adaptive software. All instructional materials and tasks are appropriately challenging and supportive for students, aligned with the learning targets and content area standards, and are culturally and academically relevant. Learner develops their own learning and develops the skills to build a network of peers and teachers to guide and support their learning. (e.g., Learner is given choices on how and what they learn based on their academic needs). 	
Student Collaboration	<ul style="list-style-type: none"> As students work collaboratively, they rely on frequent teacher prompting and re-direction to questions. Groups / pairs focus on the completion of the task as they work together, with students showing reliance on teacher. 	<ul style="list-style-type: none"> Students use peers as collaborators with some need for teacher direction and clarification. Most groups / pairs focus on mathematics as they work together, with some students showing reliance on others. 	<ul style="list-style-type: none"> Students use peers as collaborators with little need for teacher direction and clarification. All groups / pairs focus on mathematics as they manage their own learning, with each student taking an active role. 		

EFFECTIVE CLASSROOM ENVIRONMENT AND CULTURE



Rituals and routines evident and assist students in being independent

Students can freely access supplies

Students do not have assigned seats and can move around the room freely to collaborate with peers

All teachers have access to all 240 students

Classroom setup accommodates workshops as needed

EFFECTIVE PURPOSE

Intervention and enrichment activities are planned for in advanced

Instructional time is maximized to meet lesson objectives

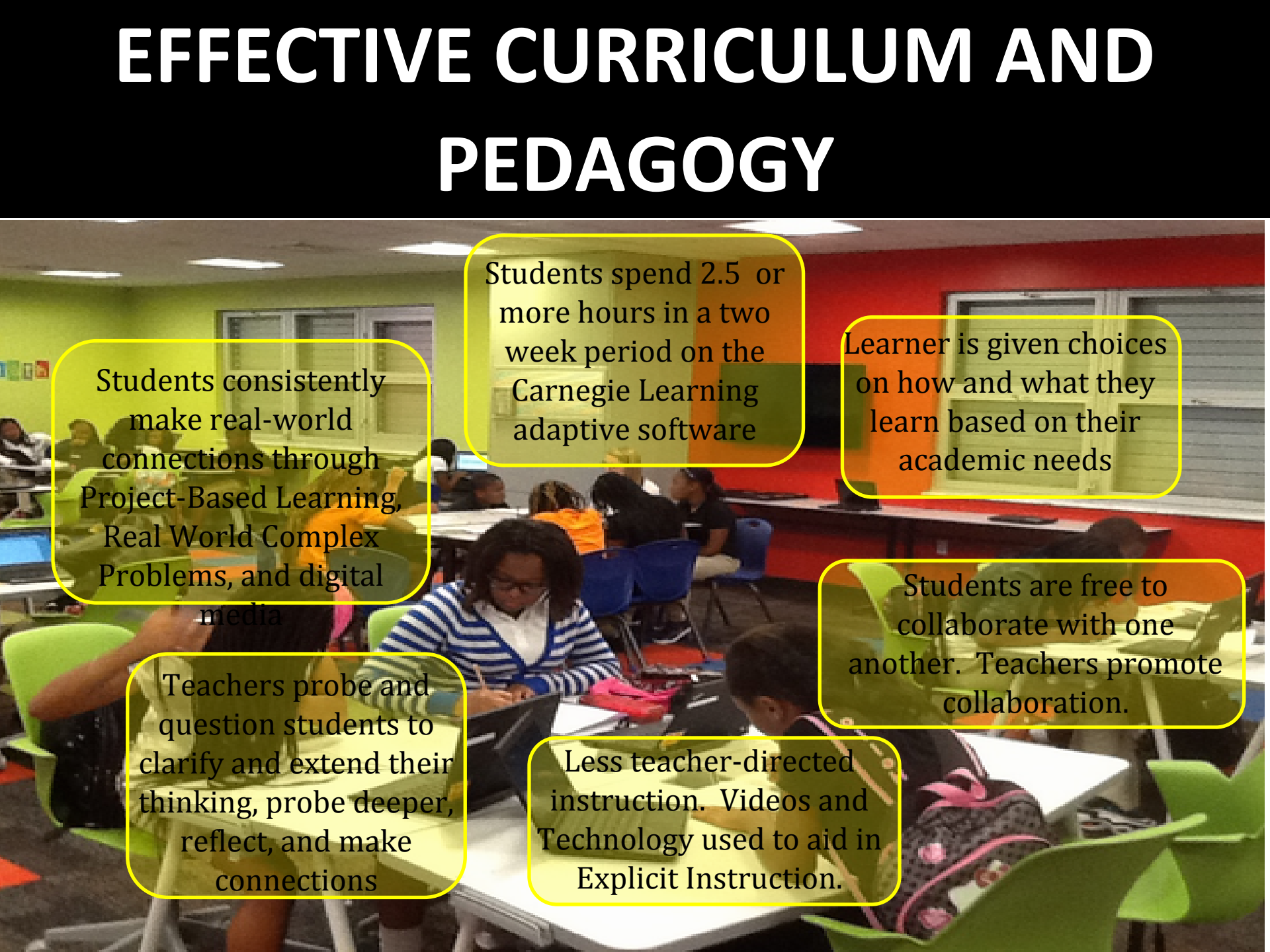
Teachers are on track to complete course expectations (according to district pacing and state standards).

iModules include:
Project-Based Learning (PBL) activities, adaptive software, rigorous text, complex problem solving and instructional technology

iModule objectives and tasks are clear to students

resources

EFFECTIVE CURRICULUM AND PEDAGOGY



Students consistently make real-world connections through Project-Based Learning, Real World Complex Problems, and digital media

Students spend 2.5 or more hours in a two week period on the Carnegie Learning adaptive software

Learner is given choices on how and what they learn based on their academic needs

Teachers probe and question students to clarify and extend their thinking, probe deeper, reflect, and make connections

Students are free to collaborate with one another. Teachers promote collaboration.

Less teacher-directed instruction. Videos and Technology used to aid in Explicit Instruction.

EFFECTIVE ASSESSMENT FOR STUDENT LEARNING

Teachers probe and question students to clarify and extend their thinking, probe deeper, reflect, and make connections

Student Learning is constantly assessed using a variety of tools: Mathia data, topic test data, exit tickets, reflections, PBLs, teacher-made assessments

Teachers give timely, specific feedback to students to aid in independent learning

Assessments are aligned to the rigor of the state standards.

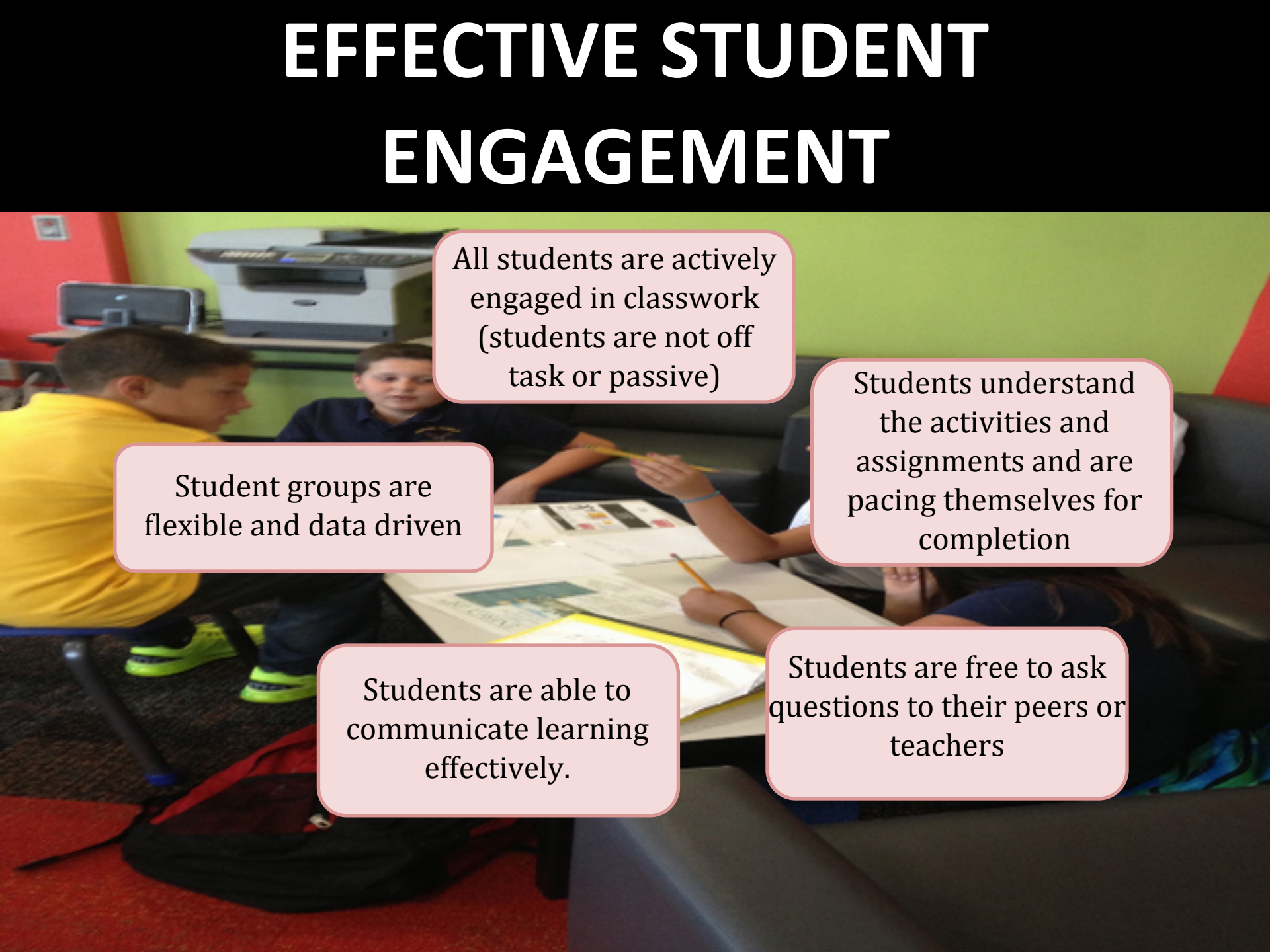
Students are free to request a workshop with the teacher

Evidence of data collection and data disaggregation.

Teachers and Students have access to data tracking forms (WWW)

Teachers pull individual students and small group workshops based on student data

EFFECTIVE STUDENT ENGAGEMENT

A photograph of a classroom where several students are sitting around a table, engaged in a learning activity. They are looking at papers and talking to each other. The background shows a printer and a computer monitor on a desk.

All students are actively engaged in classwork (students are not off task or passive)

Student groups are flexible and data driven

Students understand the activities and assignments and are pacing themselves for completion

Students are able to communicate learning effectively.

Students are free to ask questions to their peers or teachers

QUESTIONS???





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