

Not a ‘Test’ but a ‘Celebration of Learning’!

Designing Learning Experiences to Build Relationships
with the Content

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Who is in the Room?

Know the 'Why?'

Mission

Lead people to love others through education

Mission

Lead people to love others through education

Vision

Every teacher using the teaching and learning of content to love their students, communities, and the world

Mission

Love students through the teaching
and learning of mathematics



**FREE
HUGS**

**FREE
HUGS**



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Content



Students

What's New In High School? Stress Reduction 101

by TOVIA SMITH



 Enlarge

Tovia Smith/NPR

Students Gabby Venuto (left) and Julia Cohen let off some steam during some of the expanded downtime meant to ease the stress on students at the Beaver Country Day School in Chestnut Hill, Mass. The school also eliminated AP classes a few years ago — a bold move that administrators say hasn't hurt students' college prospects.

January 3, 2011

text size **A** **A** **A**

With college application deadlines looming, and some early decision letters already in the mail, high school seniors are facing a lot of anxiety.

There's enormous pressure on kids these days. But it turns out that getting schools, parents — and even kids — to ratchet it down is easier said than done.

Beaver Country Day School in Chestnut Hill, Mass., outside Boston, is one of a small but growing number of prep schools determined to buck the trend for kids on the college track.

One of the biggest changes the school has made is on display in its calculus class, which used to be an Advanced Placement course.

Making Videos About Calculus

Senior Sophie Deitz is dancing in front of a dry-erase board, improving math-themed lyrics to Christmas carols. Instead of poring over those fat old textbooks, and working on piles of AP practice tests, she and her classmates are learning complicated concepts like integration by parts by making videos about them.

"I want the calculus to be like a scary monster and then, we being like superheroes!" she exclaims.

It's exactly the kind of high-energy, low-stress kind of learning that Beaver administrators were hoping for when they decided a few years ago to eliminate their AP classes.

"I think that pressure to make sure that you had that trophy on your transcript was something that we felt wasn't necessarily that healthy for kids," says Peter Gow, director of college counseling and special programs at Beaver. "It didn't seem appropriate to be playing into that."

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Content



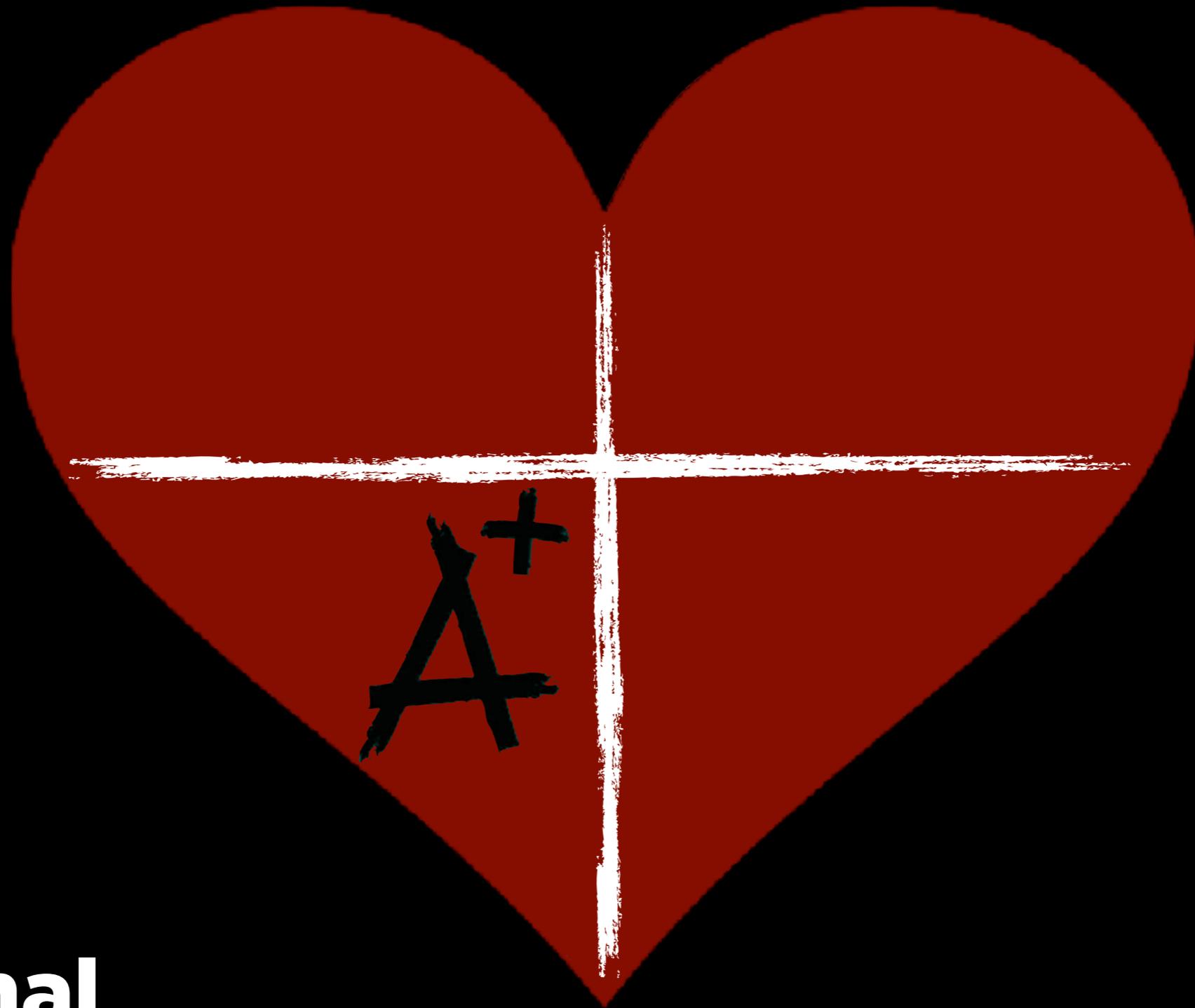
Students

Content



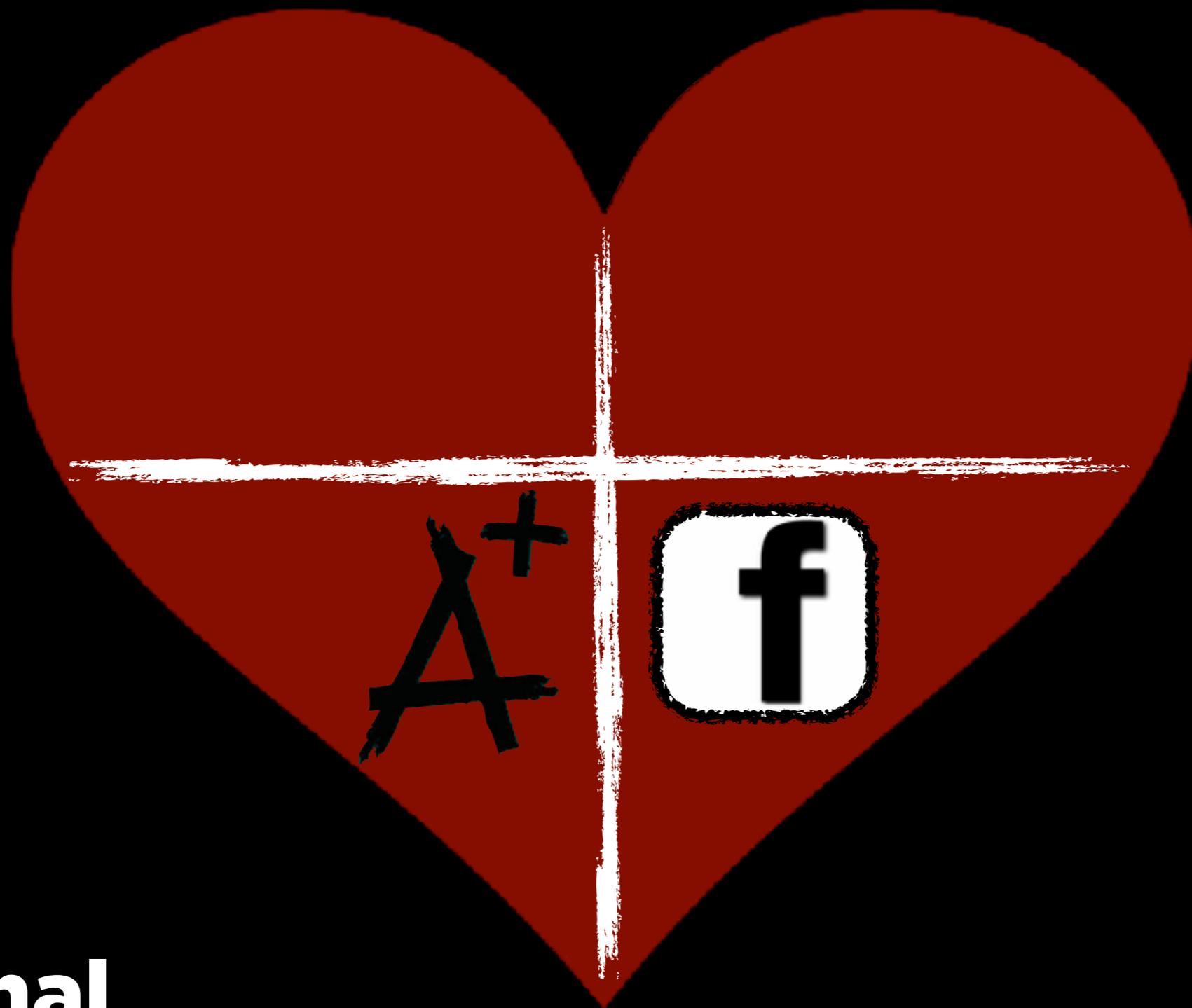
Students





Functional

students can work with mathematics to achieve success as defined by society



Communal

students can work with mathematics in and with the contexts and practices of the students' and the students' community



Critical

students can work with mathematics to analyze and question the world



Inspirational

students can work with mathematics to vision and progress toward a better world

Mission

Love students through the teaching
and learning of mathematics

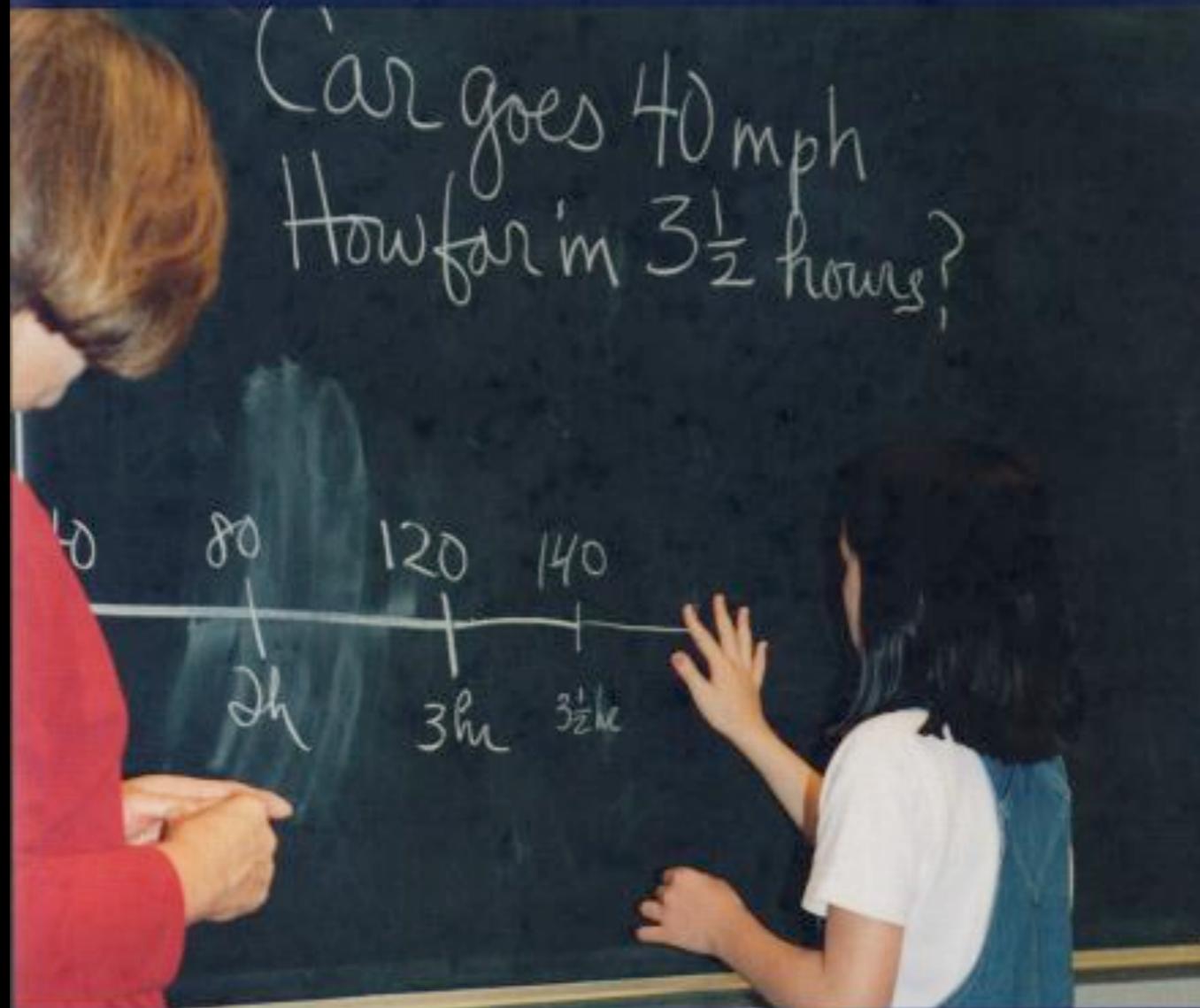
Content



Students

Know the Space

TEACHING PROBLEMS AND THE



PROBLEMS OF TEACHING

MAGDALENE LAMPERT

Content



Students

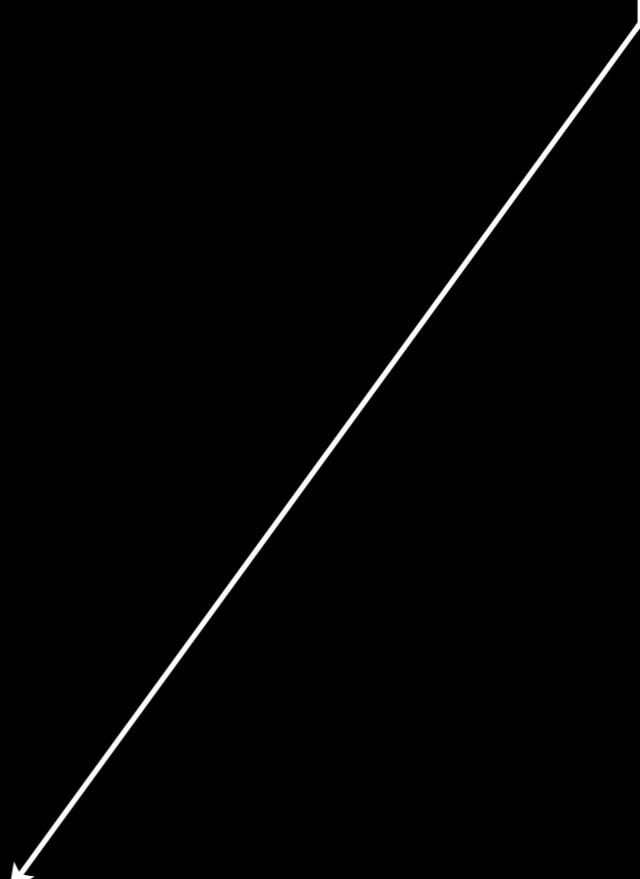
Teacher

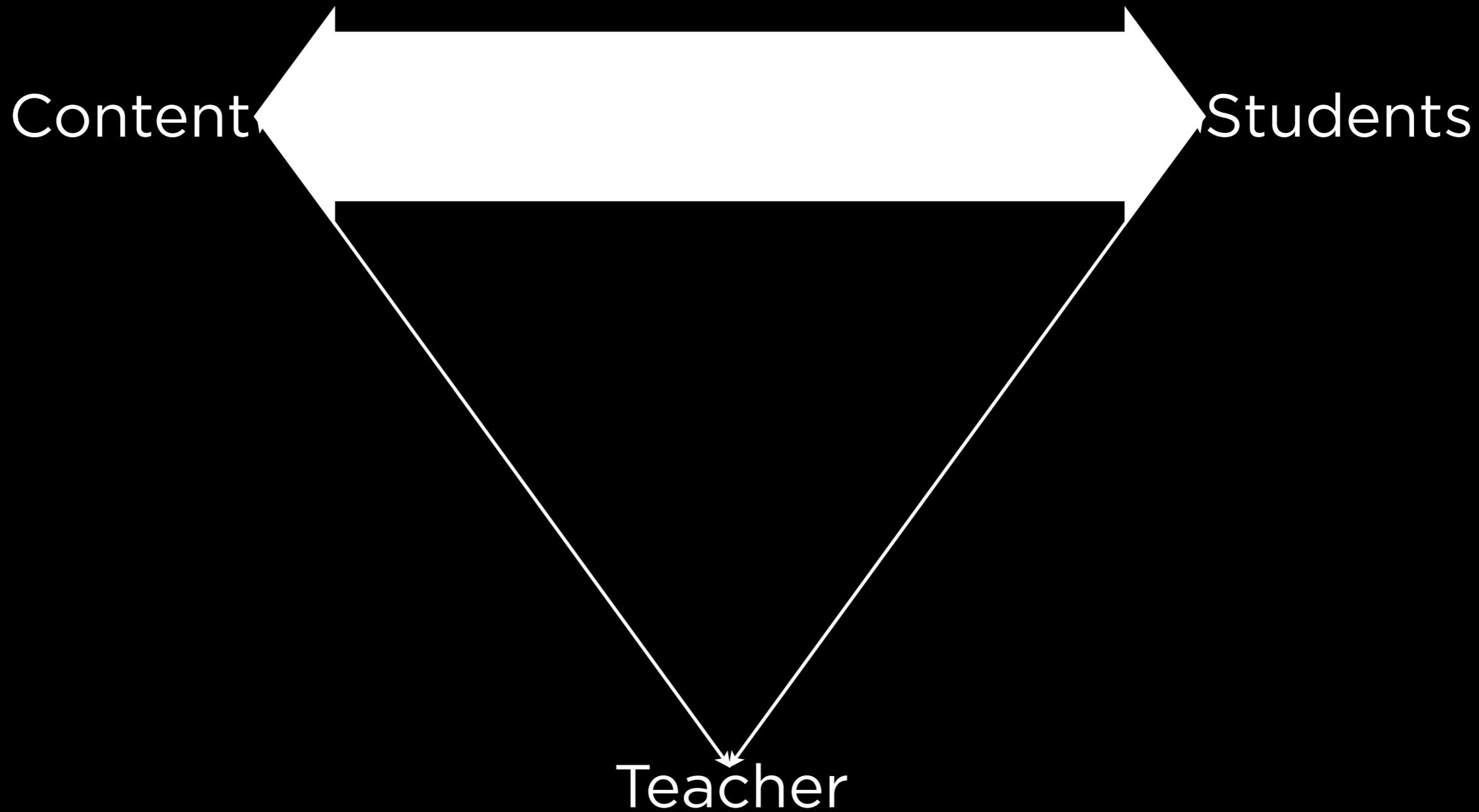
Content



Students

Teacher

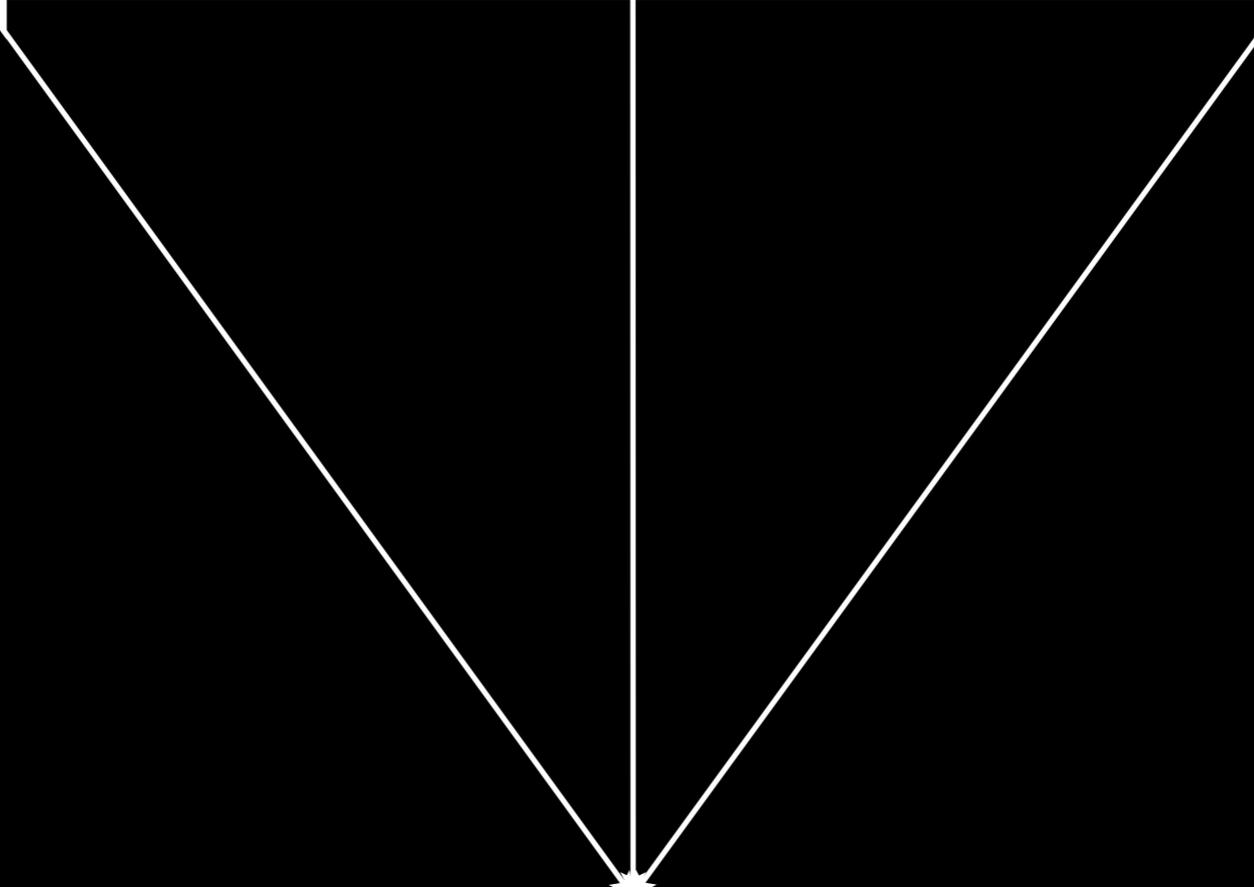




Content



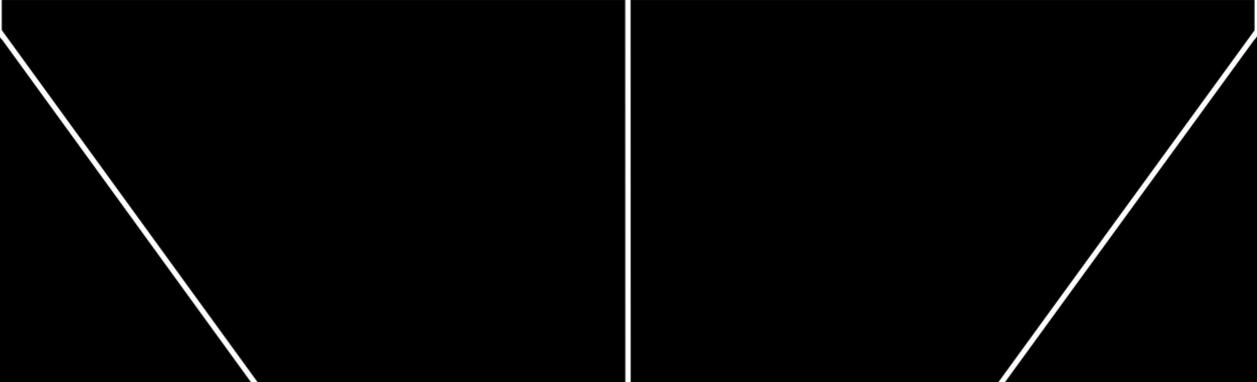
Students



Teacher

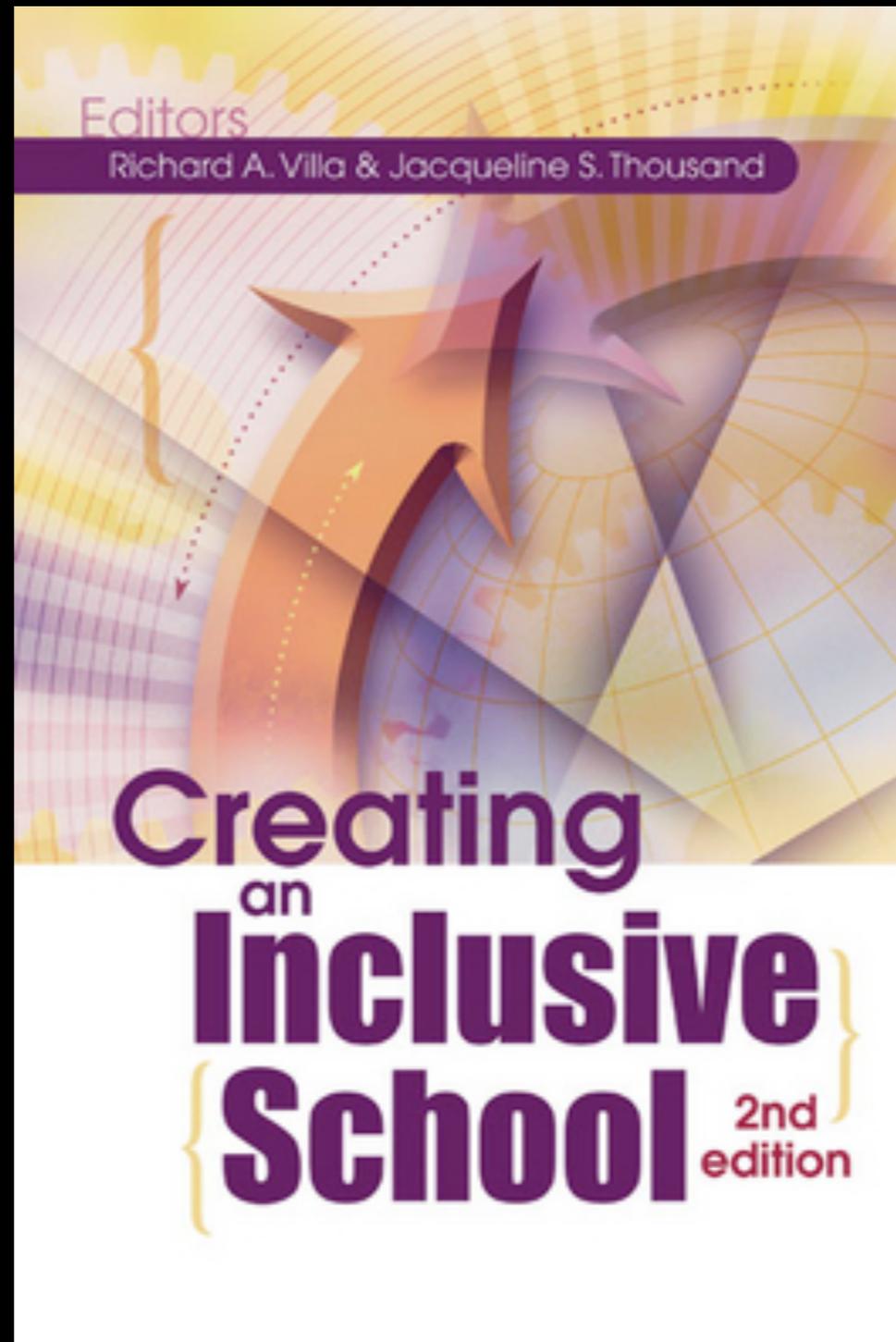
Content

Students



Practice

Teacher



Universal Design Process

(Udvari-Solner, A., Villa, R. A., & Thousand, J. S., 2005)

Universal Design Process

(Udvari-Solner, A., Villa, R. A., & Thousand, J. S., 2005)

Learners

Who will engage in the lesson?

Universal Design Process

(Udvari-Solner, A., Villa, R. A., & Thousand, J. S., 2005)

Content

Learners

What content will the students engage with?

Universal Design Process

(Udvari-Solner, A., Villa, R. A., & Thousand, J. S., 2005)

Content



Process & Product



Learners

What will be accepted as evidence of the students learning?

Universal Design Process

(Udvari-Solner, A., Villa, R. A., & Thousand, J. S., 2005)

Content



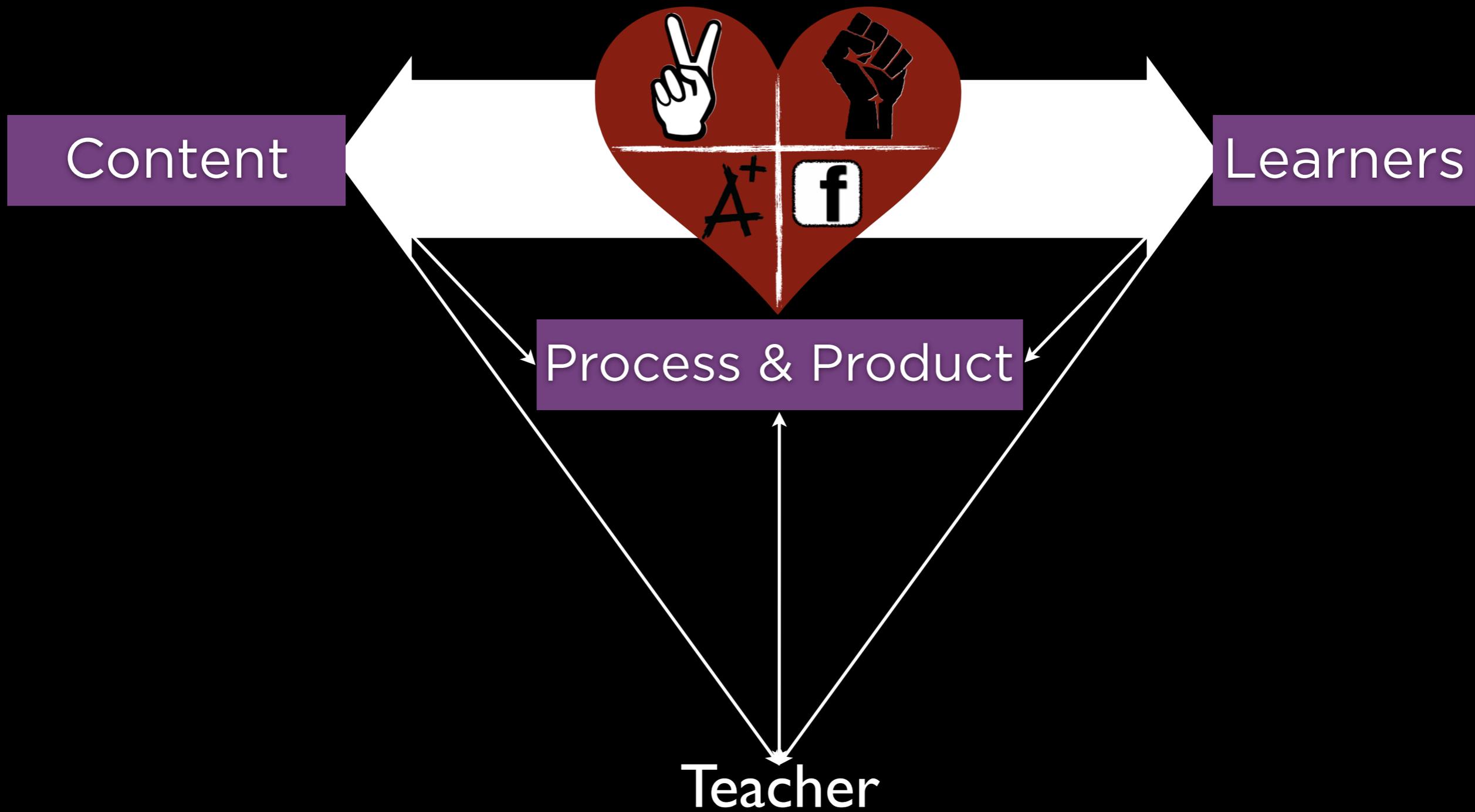
Process & Product



Learners

Universal Design Process

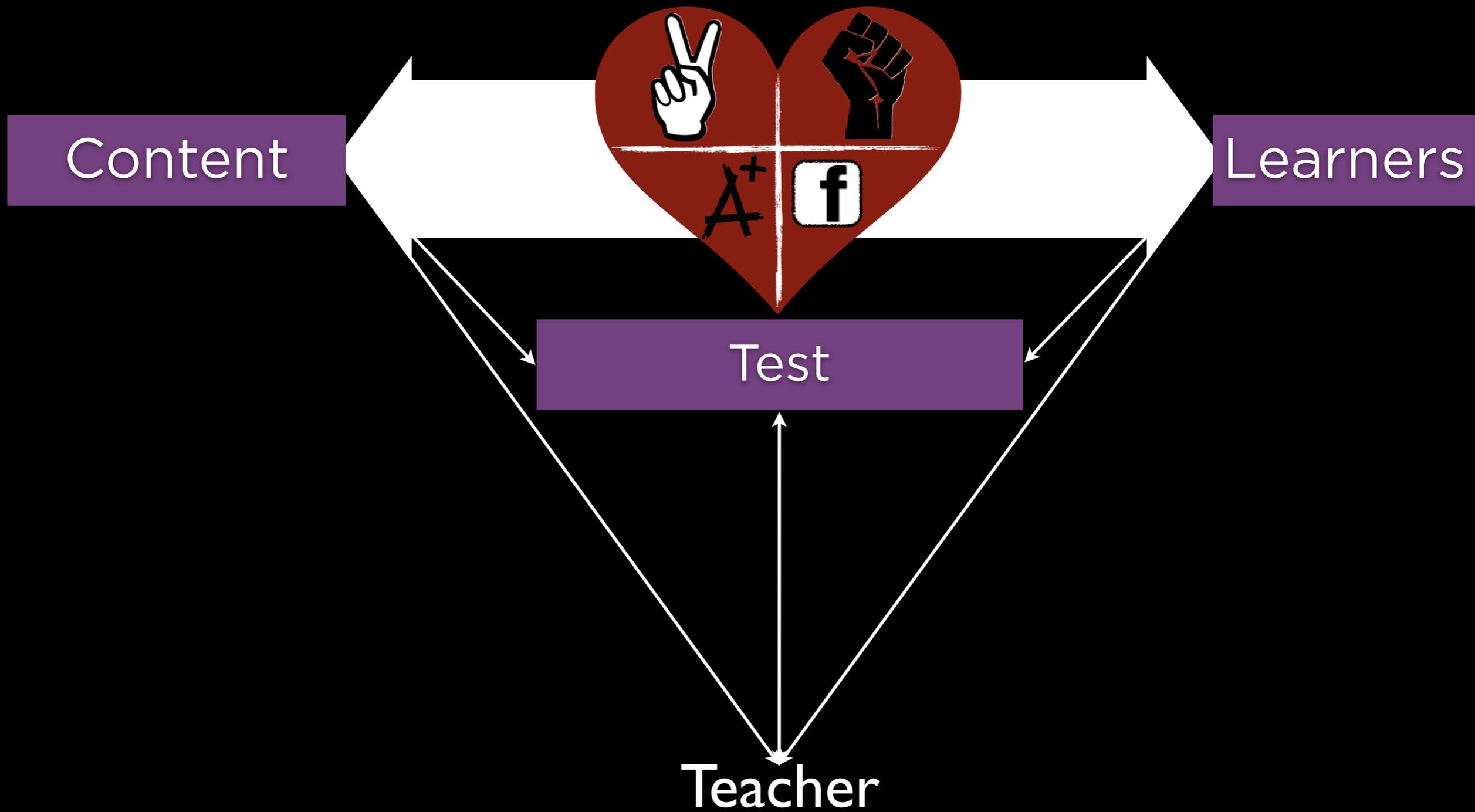
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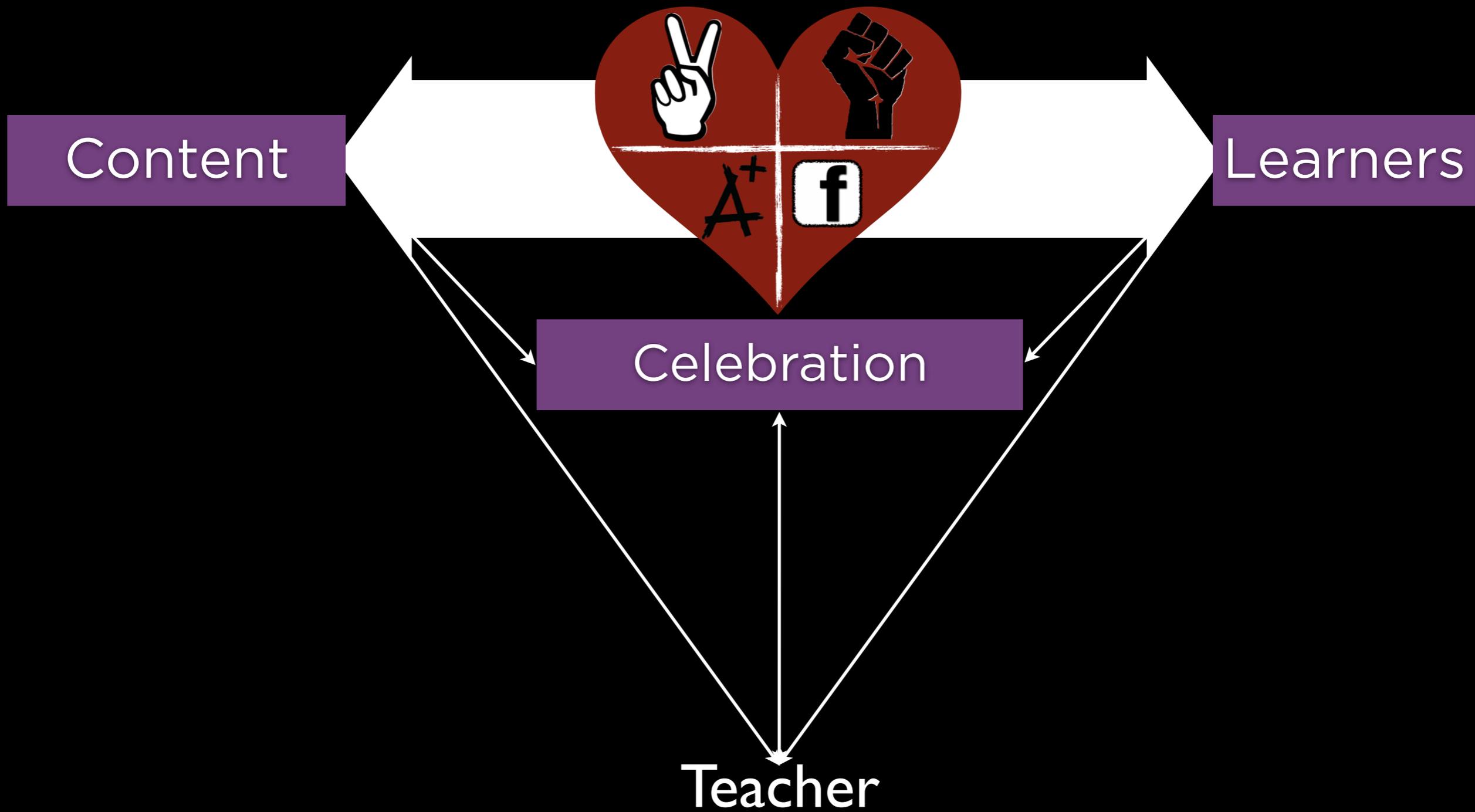


Know the 'Why?'

Now the 'How?'

Now the 'How?'





Own the Goals

Share the Goals

Invite to share their understanding of the
Goal

Share the Goal

Lesson Objectives	On Your Own Assignments [†]	Suggested Pacing	Materials
<p>Lesson 1 Cause and Effect</p> <ul style="list-style-type: none"> • Develop disposition to look for cause-and-effect relationships between variables. • Review and develop skills in organizing data in tables and graphs and using words to describe patterns of change shown in those representations. • Review or begin to develop knowledge about common patterns of change (linear, inverse, exponential, quadratic) and ability to use symbolic rules to represent and reason about those patterns. • Use tables, graphs, and rules to solve problems of cause and effect change. 	<p>After Investigation 1: A1–A3, C9, R14, R15, Rv21, Rv22</p> <p>After Investigation 2: A4, A5, C10, Rv23–Rv26</p> <p>After Investigation 3: A6 or A7, C11–C13, R15, R16 or R17, choose one of E18–E20, Rv27, Rv28</p>	7 days	<p>For each group of students</p> <ul style="list-style-type: none"> • Rubber bands and fishing weights, bags of nuts and bolts, or other weights • Meter sticks • Dice • Three different coins • Unit 1 Resource Masters
<p>Lesson 2 Change Over Time</p> <ul style="list-style-type: none"> • Develop ability to recognize recursive patterns of change. • Develop ability to use calculators to iterate stages in a recursive pattern. • Develop ability to write NOW-NEXT rules to represent recursive patterns. • Develop ability to write and use spreadsheet formulas to explore recursive patterns of change (optional investigation). • Use iteration to solve problems about population and money change over time. 	<p>After Investigation 1: See Assignment Note below. Choose one of A1–A4, A5 or A6, C10, C11, C14, C15, R19, E22 or E23, Rv26–Rv29</p> <p>After Investigation 2: A7, A8 or A9, C12 or C13, R20 or R21, E24 or E25, Rv30, Rv31</p>	6 days	<ul style="list-style-type: none"> • Access to computers with spreadsheet software, CPMP-Tools, or calculators with spreadsheet capabilities • <i>Optional:</i> CPMP-Tools data analysis software for C10, 12, and E23 • Unit 1 Resource Masters
<p>Lesson 3 Tools for Studying Patterns of Change</p> <ul style="list-style-type: none"> • Develop skill in writing rules that express problem conditions. • Review perimeter and area formulas for triangles, parallelograms, and circles, and the Pythagorean Theorem. • Develop skill in producing tables and graphs for functions. • Develop skill in using function tables, graphs, and computer algebra manipulations to solve problems that involve functional relationships, especially solving equations in one variable. • Develop informal knowledge about connections among function rules, tables, and graphs for linear, inverse, exponential, and quadratic relations. 	<p>After Investigation 1: Choose three of A1–A5, C13, choose two of C14, C18, E25, Rv31</p> <p>After Investigation 2: A6 or A7, A8, A9, C19, C20, R21–R23, choose one of E26–E29, Rv32</p> <p>After Investigation 3: A10–A12, R24, E30, Rv33–Rv36</p>	5 days	<ul style="list-style-type: none"> • Access to a Computer Algebra System such as in CPMP-Tools • Unit 1 Resource Masters
<p>Lesson 4 Looking Back</p> <ul style="list-style-type: none"> • Review and synthesize the major objectives of the unit. 		2 days (including testing)	<ul style="list-style-type: none"> • Unit 1 Resource Masters

Lesson Objectives	On Your Own Assignments [†]	Suggested Pacing	Materials
Lesson 1 Cause and Effect <ul style="list-style-type: none"> Develop disposition to look for cause-and-effect relationships between variables. Review and develop skills in organizing data in tables and graphs and using words to describe patterns of change shown in those representations. Review or begin to develop knowledge about common patterns of change (linear, inverse, exponential, quadratic) and ability to use symbolic rules to represent and reason about those patterns. Use tables, graphs, and rules to solve problems of cause and effect change. 	After Investigation 1: A1–A3, C9, R14, R15, Rv21, Rv22 After Investigation 2: A4, A5, C10, Rv23–Rv26 After Investigation 3: A6 or A7, C11–C13, R15, R16 or R17, choose one of E18–E20, Rv27, Rv28	7 days	For each group of students <ul style="list-style-type: none"> Rubber bands and fishing weights, bags of nuts and bolts, or other weights Meter sticks Dice Three different coins Unit 1 Resource Masters
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Unit 1 Patterns of Change

Represent data using graphs, tables, equations and words

Interpret data presented in graphs, tables, equations and words

Recognize important (linear, exponential, quadratic, inverse variation) patterns of change

An Invitation to Celebrate Learning

We are Celebrating Unit 1 on Tuesday and you are invited to show your learning of the following mathematics objectives:

1. Represent data using graphs, tables, equations and words
2. Interpret data presented in graphs, tables, equations and words
3. Recognize important (linear, exponential, quadratic, inverse variation) patterns of change

To help you prepare for the celebration think about the following questions:

What questions do you have about the objectives above?

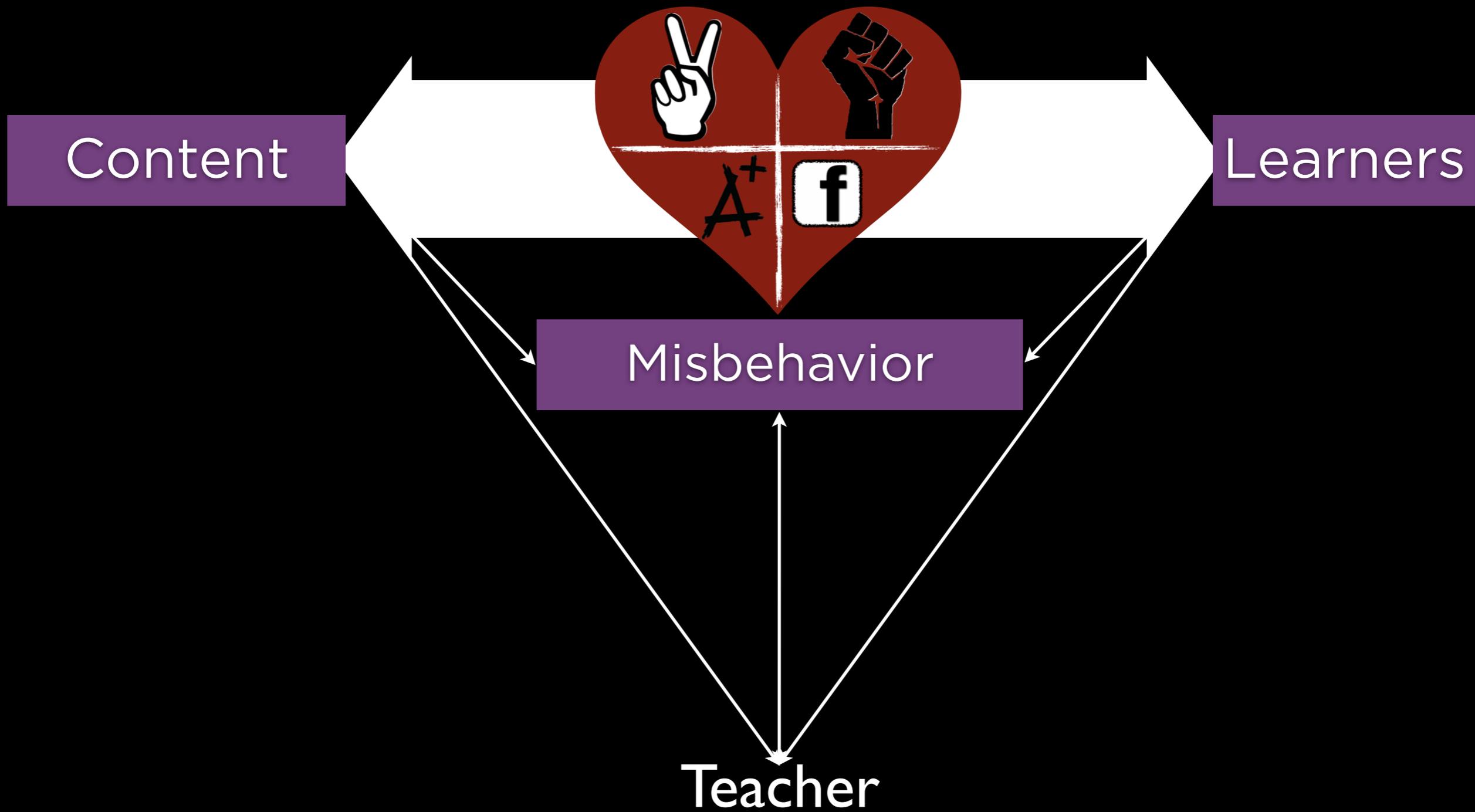
What will you do to prepare for the celebration?

How have you done on your practice (both in-class and out-of-class)?

Have you been doing it? With understanding?

Have you asked questions when you didn't understand? Did you learn from your mistakes?

Math Objectives	Brad's Scores	Steven's Scores
Use Histograms and dot plots to plot data	4	1.5
Interpret patterns seen in graphical displays	3.5	4
Compute measures of center for sets of data	3.16	4
Interpret measures of center for sets of data	1.5	2
Total	12.16	11.5



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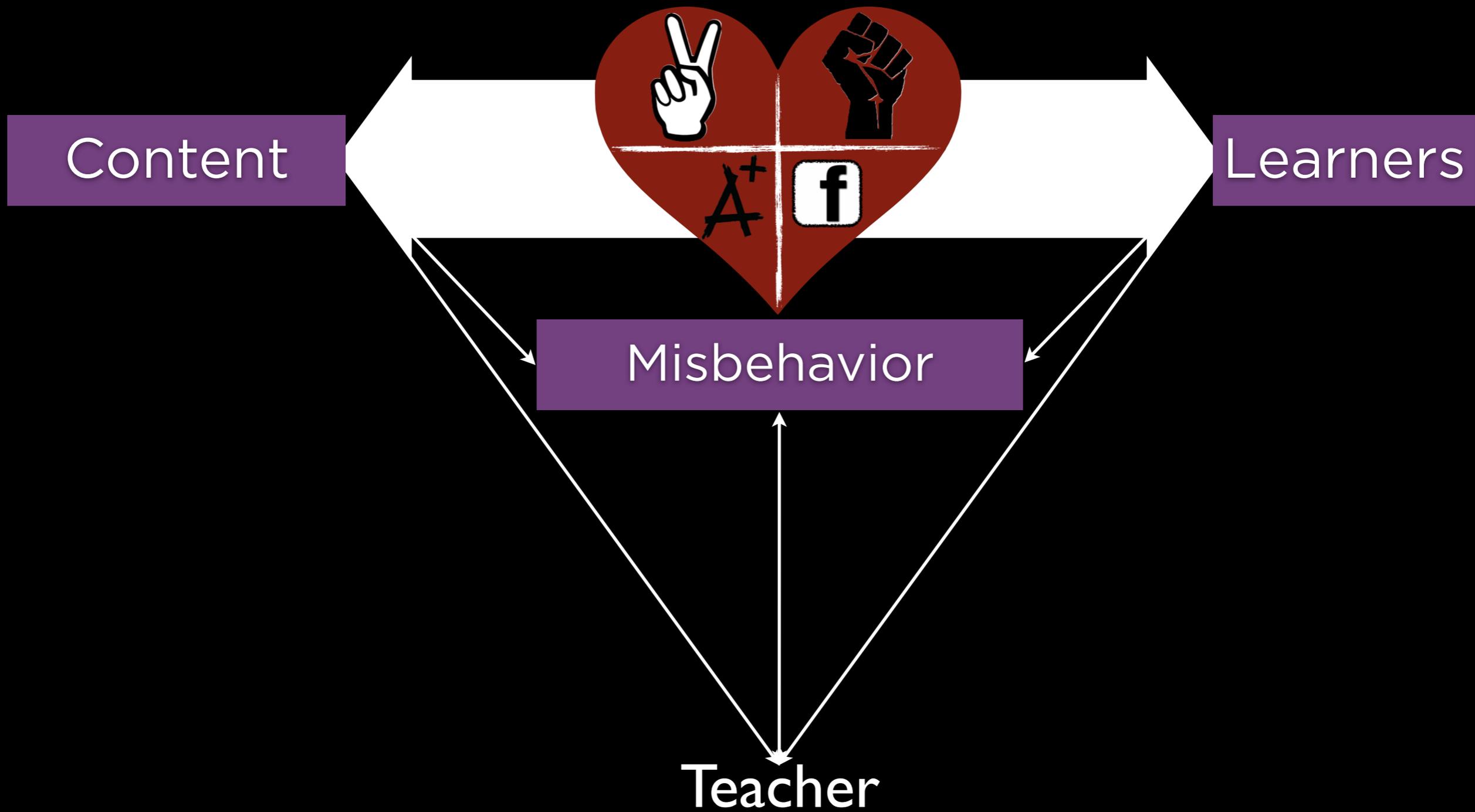
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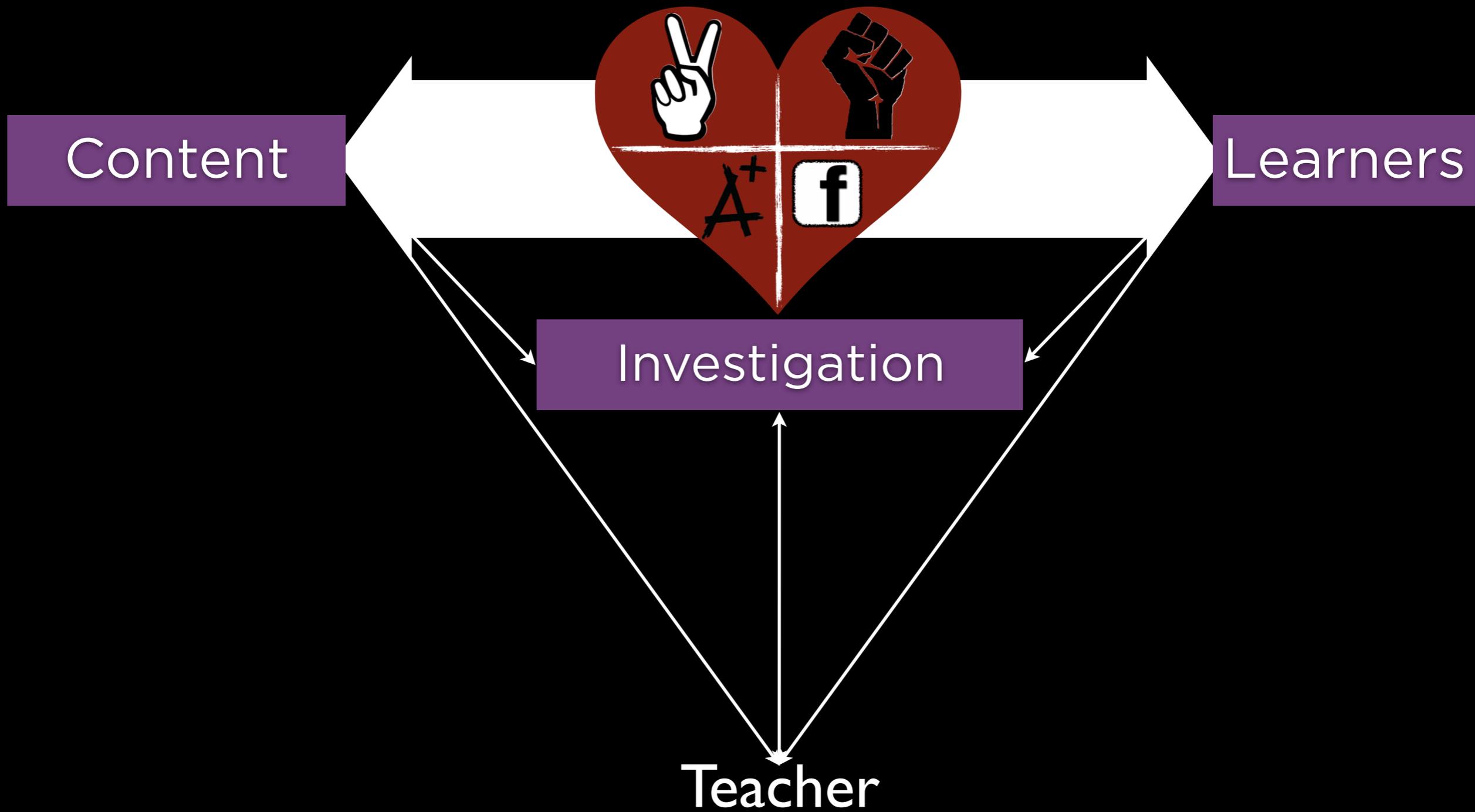
How have you done on your practice (both in-class and out-of-class)?

Have you been doing it? With understanding?

Have you asked questions when you didn't understand? Did you learn from your mistakes?

**Why do we have so much
f%*#ing homework?**





Below is the reported amount of time our class spends doing homework each day, broken up by class.

Math English History Adventures Biology Spanish Gym French Agriculture Art Band Total
in Print

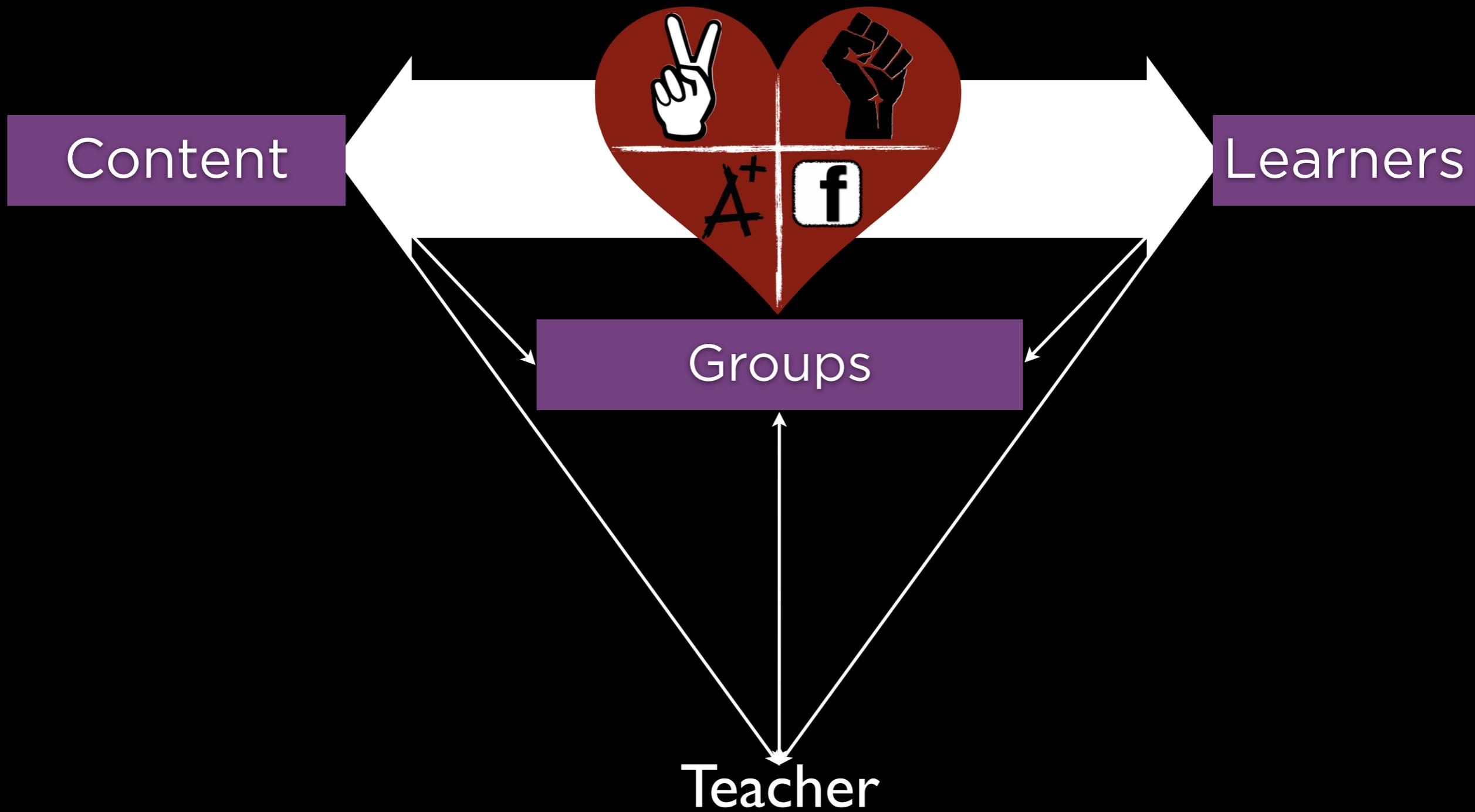
10		5		5							20
15		10			5						30
10	5	10		10							35
20	10	5									35
15		15			10						40
15	20	10		10		1					56
15	10	20		20							65
15	20	10		5			15				65
15	15	15		15	15						75
45	10	12		15							82
15	15	15		15			15	15			90
20	15	30		15	10						90
45	25	40									110
15	25	35		10	10				20		115
25	15	30		15	7					30	122
35	15	20	10	30	20						130
25	50	25		35			15				150
25	30	120		30	10						215
15	45	90		45					30		225
15	15	120		120	15						285

The goal of the project is to:

1. Practice the objectives of the unit, which are:
 - Use various graphical displays to plot data
 - Interpret patterns seen in graphical displays
 - Compute and interpret measures of center and variability for sets of data
2. Answer questions about the data.
3. Share your answers about the data to make this school a better place. This could be a recommendation for teachers, advice for students, guidelines for principals or parents, etc. The way you choose to share your answers can be of your choosing, letter, chart, pamphlet, computer presentation, poster, etc.

Before we do anything we need to answer the following question:

What is the purpose of homework?



Know the 'Why?'

before you

Now the 'How?'