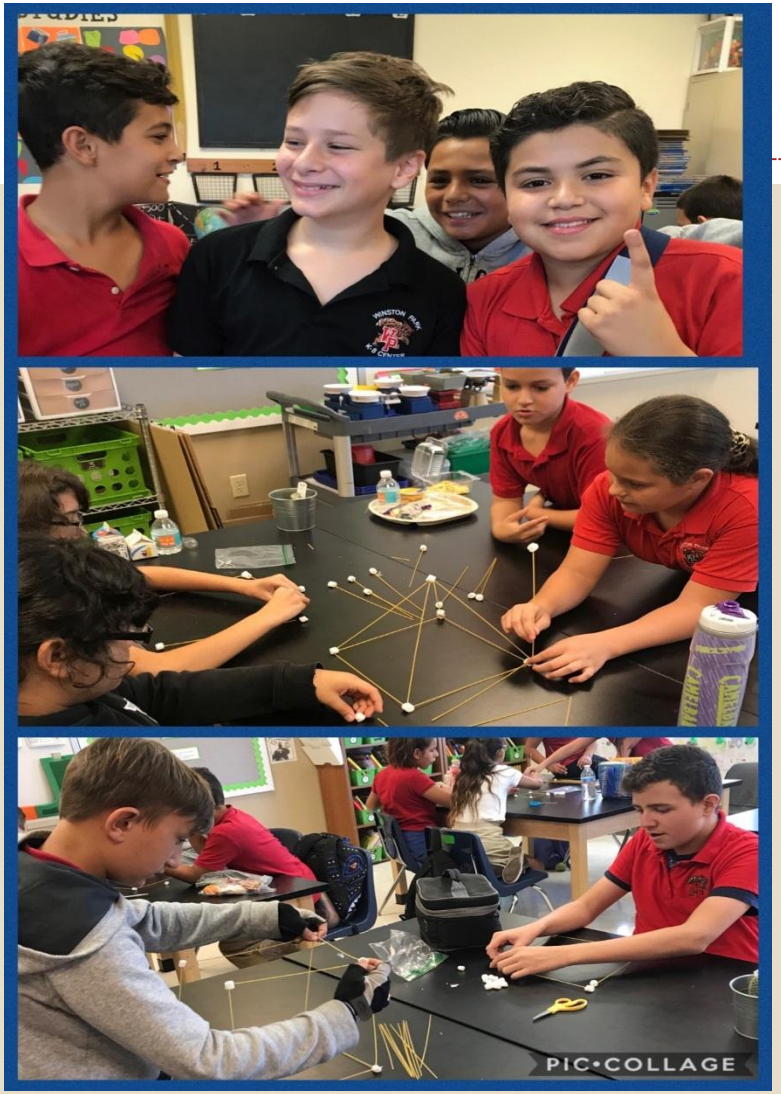
Winston Park K-8 Center

SPAGHETIMALLOW TOWER

- **Materials:**
  - 25 mini marshmallows
  - 25 uncooked thin spaghetti pasta
  - 30.48 cm (1 foot) of masking tape
  - Meter Stick
  - Stop watch
- **Procedures:**
  - Divide your class into groups (2/3/4)
  - You may want to assign roles: (Researcher, Designer, Engineer, Supplier) to give a member a purpose
  - Pass out Challenge worksheet
  - Read it over with class and explain challenge, constraints, and disqualification
  - Students will be given fifteen minutes to brainstorm design
  - Students will gather materials (To save time have pasta and mini marshmallows counted in a zip lock baggie)
  - Set timer for twenty minutes and students will engineer, test, and modify as necessary
  - When timer goes off, students must display their tower "hands off" and teacher will use meter stick to measure height
  - Each group can explain what worked and what didn't work
  - Students will fill out worksheet and turn in
- **Constraints:**
  - All designs must have at least one triangle, quadrilateral, polyhedron, right angle
  - All designs must be at least six centimeters
  - All designs must use only materials provided
  - All teams must adhere to time constraints
- **Reasons for Disqualification:**
  - Not using all materials provided
  - Eating any material
  - Not working as a team player
  - Not keeping a tidy work area
  - Not adhering to constraints

Live with
NO EXCUSES
Love with
NO REGRETS
PIC•COLLAGE


PIC•COLLAGE

Five Keys to STEAM Gold

1. Understanding STEAM
2. Staff Buy In
3. Teacher Empowerment
4. Providing Resources
5. Community Partnerships

What is STEAM?

- Science, Technology, Engineering, Arts, and Mathematics or STEAM is used to describe a method of educational focus on these subjects in schools.
- Most of the fastest growing occupations in the United States depend upon mastery of mathematics and scientific knowledge and skills.
- The standard of education must keep up with the changing times so that students are able to become qualified to a level in which they can fill jobs in this increasingly important sector.

MDCPS STEAM Designation Program

- Schools are awarded 1 of 4 levels (Participant, Bronze, Silver, or Gold) based on their performance and participation throughout the year.
- **Integration criteria** refer to the level of integration at a given school, ranging from a class, grade, to the entire school.
- **Operation criteria** involve STE(A)M course offerings, teacher professional development, student STE(A)M competitions, and parent showcases.
- **Academic criteria** involve STE(A)M equity among students and accountability in science and mathematics.

Going for the Gold

STEAM School Designation (K-8 Center)

Criteria	1 Point	2 Points	3 Points
1. STEAM-School Curriculum Integration ***[Integration]***	☐ Evidence of STEAM curriculum integration in **one grade-level (K-5th)**. ☐ Evidence of STEAM curriculum integration in **one STEAM grades (6th to 8th)**.	☐ Evidence of STEAM curriculum integration in **three grade-levels (K-5th)**. ☐ Evidence of STEAM curriculum integration in at least **two STEAM grades (6th to 8th)**.	☐ Evidence of STEAM curriculum integration at a **school-wide level (K to 8th)**.
Artifacts to quantify STEAM efforts: ***lesson plans and student artifacts***			
2. STEAM-Showcases (K-5th) ***[Operation]***	**Two** showcases; MUST include **STEAM 5.0** art, mathematics and science grade-level aligned standard activities, project-based learning of student experimentation and engineering-design. Examples include: utilization of Pacing Guide resources such as, Problem-Solving Showcases, and other STEAM inquiry-based activities.	**Three** showcases; MUST include **STEAM 5.0** art, mathematics and science grade-level aligned standard activities, project-based learning of student experimentation and engineering-design. Examples include: utilization of Pacing Guide resources such as, Problem-Solving Showcases, and other STEAM inquiry-based activities.	**Four** showcases; MUST include **STEAM 5.0** art, mathematics and science grade-level aligned standard activities, project-based learning of student experimentation and engineering-design. Examples include: utilization of Pacing Guide resources such as, Problem-Solving Showcases, and other STEAM inquiry-based activities.
Artifacts to quantify STEAM efforts: ***cover page (including standards), sign-in sheets, invitations to community stakeholders***			
3. STEAM-Science Offerings (6th-8th) ***[Academic]***	☐ Fulfill course offerings of Physical Science Honors, Biology Honors, PreIB and/or PreAICE combined. ☐ At least **25%** of **8th grade** students enrolled in Physical Science Honors, Biology Honors, PreIB **and/or** PreAICE combined.	☐ Fulfill course offerings of Physical Science Honors, Biology Honors, PreIB and/or PreAICE combined. ☐ At least **35%** of **8th grade** students enrolled in Physical Science Honors, Biology Honors, PreIB **and/or** PreAICE combined.	☐ Fulfill course offerings of Physical Science Honors, Biology Honors, PreIB and/or PreAICE combined. ☐ At least **45%** of **8th grade** students enrolled in Physical Science Honors, Biology Honors, PreIB **and/or** PreAICE combined. ☐
Data collected by the STEAM School Designation District Office			
4. STEAM-Mathematics Offerings (6th-8th) ***[Academic]***	☐ Fulfill course offering of Algebra I Honors. ☐ At least **25%** of **8th grade** students enrolled in Algebra I Honors, Geometry Honors, PreIB Mid Yrs **and/or** PreAICE combined.	☐ Fulfill course offering of Algebra I Honors. ☐ At least **35%** of **8th grade** students enrolled in Algebra I Honors, Geometry Honors, PreIB Mid Yrs **and/or** PreAICE combined.	☐ Fulfill course offerings of Algebra I Honors **and/or** Geometry Honors. ☐ At least **45%** of **8th grade** students enrolled in Algebra I Honors, Geometry Honors, PreIB Mid Yrs **and/or** PreAICE combined.
Data collected by the STEAM School Designation District Office			

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Going for the Gold

STEAM School Designation (K-8 Center)

Criteria	1 Point	2 Points	3 Points
5a. Visual & Performing Arts Education Offerings (K-5th) ***[Operation]***	□ Offer **one** hour of continuous instruction per week in **art and music**. □ Superintendent's Honors Festival □ School-based performance □ 1 Authentic Assessment	□ Offer **one** hour of continuous instruction per week in **art and music**. □ Superintendent's Honors Festival □ School-based performance □ 2 Authentic Assessment	□ Offer **one** hour of continuous instruction per week in **art and music**. □ Superintendent's Honors Festival □ School-based performance □ 3 Authentic Assessment
Artifacts to quantify STEAM ***efforts: cover page, School-Based Performance Form, any additional VPA participation will be collected by the STEAM School Designation District Office***			
5b. Visual & Performing Arts Education Offerings (6th-8th) ***[Operation]***	□ Offer **one** of the VPA Strands (Band, orchestra, chorus, art, drama, dance, guitar, etc.) in its **complete** course sequence (Levels I-III). □ Superintendent's Honors Festival □ 2 Visual Arts Authentic Assessments	□ Offer **two** of the VPA Strands (Band, orchestra, chorus, art, drama, dance, guitar, etc.) in its **complete** course sequence (Levels I-III). □ Superintendent's Honors Festival □ 1 Performing Art Competition □ 2 Visual Arts Authentic Assessments	□ Offer **three** of the VPA Strands (Band, orchestra, chorus, art, drama, dance, guitar, etc.) in its **complete** course sequence (Levels I-III). □ Superintendent's Honors Festival □ 1 Performing Art Competition □ 2 Visual Arts Authentic Assessments □ 1 Other Visual **OR** Performing Art Competition
Artifacts to quantify STEAM efforts: ***cover page, VPA participation will be collected by the STEAM School Designation District Office***			
6. Career & Technical Education ***[Operation]***	□ Offer at least **one** of the Career Technical Education (**CTE**) program. □ Maintain the **minimum** district average passing rate for Industry Certification Exams (**ICE**). □ Maintain good standing in related **CTSO AND** participate in local District-Sponsored competitions. ***(Include a copy of CTSO Certificate of Affiliation)***	□ Offer at least **two** of the Career Technical Education (**CTE**) programs. □ Maintain the **minimum** district average passing rate for Industry Certification Exams (**ICE**). □ Maintain good standing in related **CTSO AND** participate in local District-Sponsored competitions. ***(Include a copy of CTSO Certificate of Affiliation)***	□ Offer at least **three** of the Career Technical Education (**CTE**) programs. □ Maintain the **minimum** district average passing rate for Industry Certification Exams (**ICE**). □ Maintain good standing in related **CTSO AND** participate in local District-Sponsored competitions. ***(Include a copy of CTSO Certificate of Affiliation)***
Artifacts to quantify STEAM efforts: ***cover page, CTE programs http://dcte.dadeschools.net/cteprograms.html and Career and Technical Student Organization (CTSO) http://dcte.dadeschools.net/studentorg.html District-Sponsored competitions: Innovate@CTEC, The FAIR and The Education Fund***			

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Going for the Gold

STEAM School Designation (K-8 Center)

Criteria	1 Point	2 Points	3 Points
7. Teacher Professional Development ***[Operation]***	☐ **60%** of STEAM teachers participate in at least **one** STEAM-focused professional development **and** there is clear evidence of correlation and its implementation in classroom instruction.	☐ **70%** of STEAM teachers participate in at least **one** STEAM-focused professional development **and** there is clear evidence of correlation and its implementation in classroom instruction.	☐ **80%** of STEAM teachers participate in at least **one** STEAM-focused professional development **and** there is clear evidence of correlation and its implementation in classroom instruction.
Artifacts to quantify STEAM efforts: ***master schedule, MyLearningPlan Documentation, Professional Development Metrics Form***			
8a. STEAM Competitions (K-5th) ***[Operation]***	☐ **Science Fair: two** project board submissions ☐ **SECME:** banner, essay, Mathematics Challenge ☐ **Two** other **STEAM-focused** events	☐ **Science Fair: three** project board submissions ☐ **SECME:** banner, essay, Mathematics Challenge ☐ **Three** other **STEAM-focused** events	☐ **Science Fair; four** project board submissions ☐ **SECME;** banner, essay, Mathematics Challenge ☐ **Four** other **STEAM-focused** events
District-approved competitions: ***cover page, Dream in Green, Everglades Champion School, Fairchild Challenge, robotics competitions, Science Fair*** *http://science.dadeschools.net/scienceFair/default.html* ***and SECME*** *http://science.dadeschools.net/secme/default.html*			
8b. STEAM Competitions (6th–8th) ***[Operation]***	☐ **Science Fair: five** project board submissions ☐ **SECME**: banner, essay, Mathematics Challenge ☐ **Robotics**: participation in **one** competition ☐ **Two** other **STEAM-focused** events	☐ **Science Fair: six** project board submissions ☐ **SECME**: banner, essay, Mathematics Challenge ☐ **Robotics**: participation in **two** competitions ☐ **Four** other **STEAM-focused** events	☐ **Science Fair: seven** project board submissions ☐ **SECME**: banner, essay, Mathematics Challenge ☐ **Robotics**: participation in **three** competitions ☐ **Six** other **STEAM-focused** events
District-approved competitions: cover page, ***DCCTM , Dream in Green, Fairchild Challenge, Math Counts, robotics competitions, SECME*** *http://science.dadeschools.net/secme/default.html* ***and Science Fair*** *http://science.dadeschools.net/scienceFair/default.html*			
9.Partnerships ***[Operation]***	☐ **Two** business, community, or post-secondary partnerships are involved in an **on-going relationship (at least four interactions per partnership)** with the STEAM instructional program **and** are directly connected to in-class learning and standard-driven.	☐ **Three** business, community, or post-secondary partnerships are involved in an **on-going relationship (at least four interactions per partnership)** with the STEM instructional program **and** are directly connected to in-class learning and standard-driven.	☐ **Four** business, community, or post-secondary partnerships are involved in an **on-going relationship (at least four interactions per partnership)** with the STEAM instructional program **and** are directly connected to in-class learning and standard-driven.
Artifacts to quantify STEAM efforts: ***cover page (including standards per partnership), sign-in sheets***			

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Going for the Gold

STEAM School Designation (K-8 Center)

Criteria	1 Point	2 Points	3 Points
10. STEAM-Science Equity: Minority and economically disadvantaged (free and reduced-price lunch) ***[Academic]***	□ At least **25%** of 8th grade students enrolled in Physical Science Honors, Biology Honors, PreIB **and/or** PreAICE combined. □ At least **5%** of **7th grade** students enrolled in Physical Science Honors, PreIB **and/or** PreAICE combined.	□ At least **35%** of 8th grade students enrolled in Physical Science Honors, Biology Honors, PreIB **and/or** PreAICE combined. □ At least **10%** of **7th grade** students enrolled in Physical Science Honors, PreIB **and/or** PreAICE combined.	□ At least **45%** of 8th grade students enrolled in Physical Science Honors, Biology Honors, PreIB **and/or** PreAICE combined. □ At least **15%** of **7th grade** students enrolled in Physical Science Honors, PreIB **and/or** PreAICE combined.
	□ Increase of **3 to 5 percentage points** scoring at Achievement **Level 3 or higher** on the State Science Assessment (including Biology EOC). □ **OR** at least **40%** of students scoring at Achievement **Level 3 or higher** on the State Science Assessment, with the exception of Biology EOC, scoring at least **80%**.	□ Increase of **6 to 11 percentage points** scoring at Achievement **Level 3 or higher** on the State Science Assessment (including Biology EOC). □ **OR** at least **60%** of students scoring at Achievement **Level 3 or higher** on the State Science Assessment, with the exception of Biology EOC, scoring at least **85%**.	□ Increase of **12 or more percentage points** scoring at Achievement **Level 3 or higher** on the State Science Assessment (including Biology EOC). □ **OR** at least **80%** of students scoring at Achievement **Level 3 or higher** on the State Science Assessment, with the exception of Biology EOC, scoring at least **90%**.
Data collected by the STEAM School Designation District Office			
11. STEAM-Mathematics Equity: Minority and economically disadvantaged (free and reduced-price lunch) ***[Academic]***	□ Fulfill course offering of Algebra I Honors. □ At least **25%** of **8th grade** students enrolled in Algebra I Honors, Geometry Honors, PreIB Mid Yrs **and/or** PreAICE combined.	□ Fulfill course offering of Algebra I Honors. □ At least **35%** of **8th grade** students enrolled in Algebra I Honors, Geometry Honors, PreIB Mid Yrs **and/or** PreAICE combined.	□ Fulfill course offerings of Algebra I Honors **and/or** Geometry Honors. □ At least **45%** of **8th grade** students enrolled in either Algebra I Honors, Geometry Honors, PreIB Mid Yrs **and/or** PreAICE combined.
	□ Increase of **3 to 4 percentage points** scoring at Achievement **Level 3 or higher** on the grades 6-8 State Mathematics Assessment (including EOC's). □ **OR** at least **40%** of students scoring at Achievement **Level 3 or higher** on the State Mathematics Assessment, with the exception of Algebra I and Geometry EOC, scoring at least **80%**.	□ Increase of **5 to 7 percentage points** scoring at Achievement **Level 3 or higher** in on the grades 6-8 State Mathematics Assessment (including EOC's). □ **OR** at least **60%** of students scoring at Achievement **Level 3 or higher** on the State Mathematics Assessment, with the exception of Algebra I and Geometry EOC, scoring at least **85%**.	□ Increase of **8 or more percentage points** scoring at Achievement **Level 3 or higher** on the grades 6-8 State Mathematics Assessment (including EOC's). □ **OR** at least **80%** of students scoring at Achievement **Level 3 or higher** on the State Mathematics Assessment, with the exception of Algebra I and Geometry EOC, scoring at least **90%**.
Data collected by the STEAM School Designation District Office			

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Going for the Gold

STEAM School Designation (K-8 Center)

Criteria	1 Point	2 Points	3 Points
12. Science Accountability ***[Academic]***	□ Increase of **3 to 5 percentage points** scoring at Achievement **Level 3 or higher** on the State Science Assessment (including Biology EOC). □ **OR** at least **40%** of students scoring at Achievement **Level 3 or higher** on the State Science Assessment, with the exception of Biology EOC, scoring at least **80%**.	□ Increase of **6 to 11 percentage points** scoring at Achievement **Level 3 or higher** on the State Science Assessment (including Biology EOC). □ **OR** at least **60%** of students scoring at Achievement **Level 3 or higher** on the State Science Assessment, with the exception of Biology EOC, scoring at least **85%**.	□ Increase of **12 or more percentage points** scoring at Achievement **Level 3 or higher** on the State Science Assessment (including Biology EOC). □ **OR** at least **80%** of students scoring at Achievement **Level 3 or higher** on the State Science Assessment, with the exception of Biology EOC, scoring at least **90%**.
Data collected by the STEAM School Designation District Office			
13. Mathematics Accountability ***[Academic]***	□ Increase of **3 to 4 percentage points** scoring at Achievement **Level 3 or higher** on the grades 6-8 State Mathematics Assessment (including EOC's). □ **OR** at least **40%** of students scoring at Achievement **Level 3 or higher** on the State Mathematics Assessment, with the exception of Algebra I and Geometry EOC, scoring at least **80%**.	□ Increase of **5 to 7 percentage points** scoring at Achievement **Level 3 or higher** in on the grades 6-8 State Mathematics Assessment (including EOC's). □ **OR** at least **60%** of students scoring at Achievement **Level 3 or higher** on the State Mathematics Assessment, with the exception of Algebra I and Geometry EOC, scoring at least **85%**.	□ Increase of **8 or more percentage points** scoring at Achievement **Level 3 or higher** on the grades 6-8 State Mathematics Assessment (including EOC's). □ **OR** at least **80%** of students scoring at Achievement **Level 3 or higher** on the State Mathematics Assessment, with the exception of Algebra I and Geometry EOC, scoring at least **90%**.
Data collected by the STEAM School Designation District Office			

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What is a STEAM 5.0 Activity?

Activity	STEM 1.0 (Science)	STEM 2.0 (Mathematics)	STEM 3.0 (Engineering)	STEM 4.0 (Technology)	STEM 5.0 (Arts)

What is Engineering?

- Engineering calls for students to apply what they know about science and math—and their learning is enhanced as a result. At the same time, because engineering activities are based on real-world technologies and problems, they help students see how disciplines like math and science are relevant to their lives.
- Hands-on, project-based learning is the essence of engineering. As groups of students work together to answer questions like, “How large should I make the canopy of this parachute?” or, “What material should I use for the blades of my windmill?” they collaborate, think critically and creatively, and communicate with one another.

Engineering Process

Real-World Need/Problem

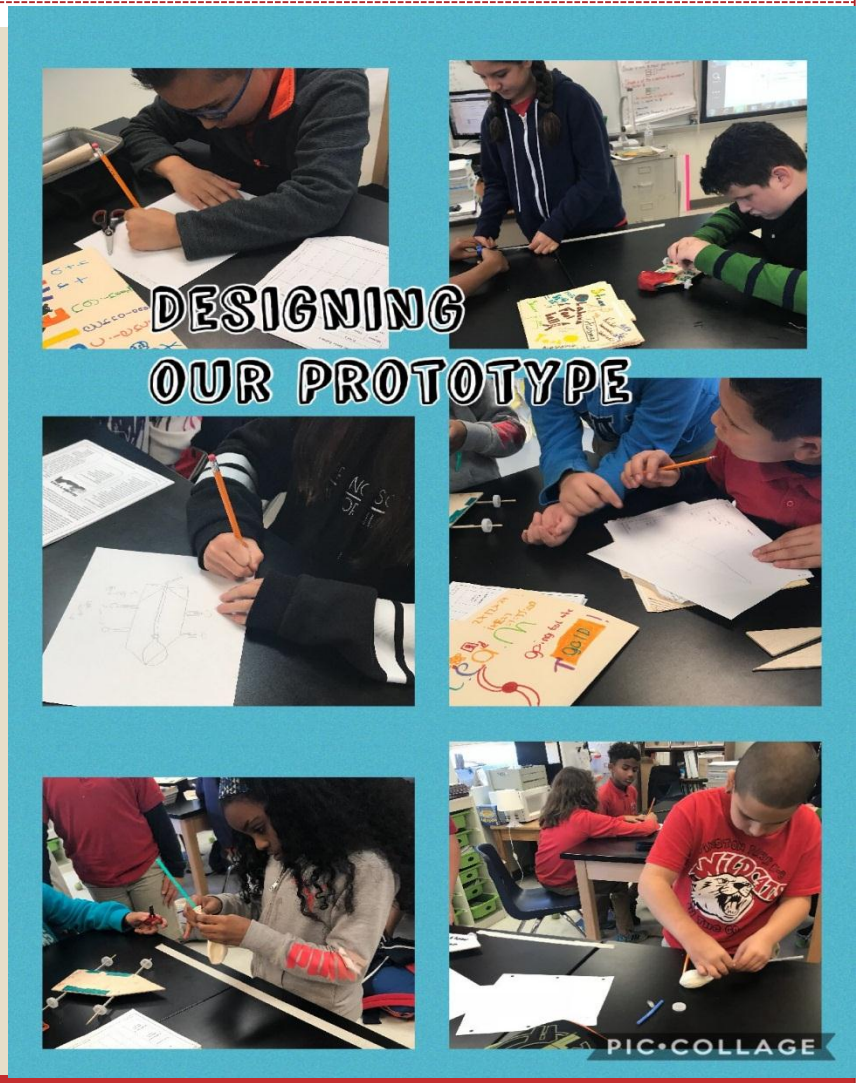
Planning/Design Process

Prototyping

Testing

Redesign/Improve

Communicate Findings



Second Key- Staff Buy In

- School culture must be one of:
  - Students First
  - Positive Energy
  - Growth Mindset
  - Being the Best

Staff Buy In

- Teacher Leaders
- Staff Longevity
- Provide Supporting Research
- Encouraging Reflective Practice
- Provide Resources ex:
  - https://www.cpalms.org/
  - http://science.dadeschools.net/
  - http://stem.dadeschools.net/
  - http://fldoe.org
  - http://vivifystem.com

Third Key- Teacher Empowerment

- Provide teachers with the opportunities to think/act outside of the box
  - Creative Elective Courses
  - Clubs/Activities
  - The Power of “Yes”
  - Administrative Support
  - Professional Discretion
  - Collaborative Planning

First Lego League

Fourth Key- Providing Resources

- Utilization of funds
  - Stipends
  - Purchase Resources
  - Scheduling
  - Tutoring
  - Interventions
  - Professional Development

WINSTON PARK K-8 CENTER

2017 -2018

Professional Development Schedule

August 14, 2017	Instructional Leadership Team Meeting
August 17, 2017	Welcome Back
	Open Faculty Meeting
	Grade Level Meeting & Planning
August 18, 2017	Professional Development
October 7, 2017	STEAMing for Gold
October 27, 2017	STEAMing for Gold Part II
November 8, 2017	Growth Mindset Day 1
November 15, 2017	Growth Mindset Day 2
November 29, 2017	Ethics Training
December 5, 2017	Ethics Training
December 6, 2017	Growth Mindset Day 3
December 13, 2017	Growth Mindset Day 4
January 29, 2018	ClassFlow Day 1
January 31, 2018	Ethics Training
February 5, 2018	Classflow Day 2
February 13, 2018	Classflow Day 3

Fifth Key- Community Partnerships

- PTSA
- EESAC
- Booster Clubs
- High Schools
- Alumni
- KFHA
- WP Homeowners Association
- STEAM Family Night

Additional Information

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