

A group of students in a gymnasium performing various CrossFit exercises. In the foreground, a student is rowing on a rowing machine. In the background, several students are performing squats and deadlifts with barbells. The gym is filled with equipment like barbells, weights, and rowing machines. A sign in the background says "Support Strong Student Bodies".

# Using CrossFit to Achieve the K-12 National Physical Education Standards

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# Outline

- What is CrossFit? What is CrossFit Kids?
- Elementary School
  - Program description
  - Sample progressions/activities
  - National Standards
- Middle/High School
  - Program description
  - Sample progressions/activities
  - National Standards
- Conclusions & Final Thoughts
- Questions



# What is CrossFit?

## Goal:

- Work capacity across broad time and modal domains

## What does that mean?

- Being able to move, in just about any way, against any resistance, for any amount of time
- Fitness that is BIG – Broad, General, and Inclusive
- Addresses all components of health- and skill-related fitness

# What is CrossFit?

## How do we achieve that goal?

- Functional movement, constantly varied programming, performed at high intensity



# Functional Movement

- Movement that transfers to real world athletic performance and/or everyday tasks.
- Mostly ground-based, multi-joint, 3-dimensional movements.
- 3 categories of movements
  - Mono-structural (cardio)
  - Gymnastics/bodyweight
  - Weight lifting



# Functional Movement

| Mono-structural                                    | Gymnastics/<br>Bodyweight  | Weightlifting  |
|--|--|--|
| <p>Run<br/>Bike<br/>Row<br/>Jump rope<br/>Swim</p> | <p>Air squat<br/>Pull-up<br/>Push-up<br/>Dip<br/>Handstand<br/>Sit-up<br/>Jumping and landing<br/>Lunges<br/>Forward roll<br/>Burpee<br/>Cartwheel</p> | <p>Deadlifts<br/>Cleans<br/>Presses<br/>Jerks<br/>Squats (back, front,<br/>overhead)<br/>Medicine ball drills<br/>Kettlebell swings<br/>Snatch</p> |

# Constantly Varied Programming

- The movement requirements of every class period are different.
  - This ensures that all functional movements of the body are being expressed in many different contexts and combinations
- For the most part, no two workouts are the same
  - Kids never get bored and the novelty of each workout keeps them excited about participating

Balance is key

- Cardio/gymnastics/weight lifting
- Short/medium/long duration
- Push/pull, upper/lower body, hip flexion/extension
- Strength/metabolic conditioning



# High Intensity

- Intensity is highly individualized and subjective
- Intensity takes a back seat to technique in CrossFit Kids
- Progression
  - Form -> Consistency -> Intensity





# High Intensity

Intensity is achieved through 3 workout formats:

1. Complete a set amount of work as quickly as possible
2. Do as much work as possible in a fixed amount of time
3. Move as much weight as possible.
  - *Would not be utilized in normal CF Kids class*



# High Intensity

Workouts need to be modified (scaled) to fit the fitness levels of your students.

## **Scaling Options:**

1. Modify the movements.
  - Athletes need to be able to consistently demonstrate good form on a movement before it is used in a WOD.
2. Decrease the load.
  - Select loads that the athlete can lift safely and with good form.
  - Select loads that will allow the athlete to work in the desired metabolic pathway.
3. Decrease the number of rounds/reps. (see above)

# Example Workouts and Scalings

## **Varsity**

21-15-9 reps of:

Power clean; females: 95 lb, males: 135 lb

Ring dips

(Complete 21 reps of each exercise, then 15 reps of each, then 9 reps of each)

## **JV**

21-15-9 reps of:

Power clean; females: 65 lb, males: 95 lb

Bar dips

## **Novice/Pack**

15-12-9 reps of

Power clean; females: 65/45 lb, males: 95/65 lb

Bar dips

## **Puppies**

15-12-9 reps of

Power clean; females: 10-20 lb, males: 10-45 lb

Bench dips

# Example Workouts and Scalings

## **Varsity**

Complete as many rounds as possible in 20 minutes of:

- 5 pull-ups
- 10 push-ups
- 15 squats

## **JV**

Complete as many rounds as possible in 15 minutes of:

- 5 pull-ups
- 10 push-ups
- 15 squats

## **Novice/Pack**

Complete as many rounds as possible in 12 minutes of:

- 3 pull-ups
- 6 push-ups
- 9 squats

## **Puppies**

Complete as many rounds as possible in 10 minutes of:

- 3 modified pull-ups
- 6 push-ups on knees
- 9 squats

# CrossFit Kids Learning Objectives

- **Skill Development**
  - Focus on functional movements and universal motor recruitment patterns
  - pull, push, run, throw, climb, lift and jump
- **Regular, healthful physical activity**
- **Improved physical fitness**
- **Support for other subject areas**



# CrossFit Kids Learning Objectives

- **Self-discipline**
  - disciplined in the areas of self-scaling, equipment and movement safety; body awareness; and individualized programming
- **Stress reduction**
- **Strengthened peer relations**
  - expected to encourage and support their peers in the pursuit of attaining individual goals
- **Improved self-confidence and self-esteem**
- **Experiencing goal setting**

# How is CF different?

## How is CF different from how we usually do fitness in PE?

- Fitness as sport
- Tracking of times/scores
- Constantly varied - new workouts/challenges every day
- High intensity
- Emphasis on technique
- Everyone is an athlete



# CrossFit in Elementary PE





# Primary Grades (K-2)

- Primary emphasis is still on developing well-rounded movement foundation through teaching basic motor skills (locomotor, non-locomotor, manipulative) and movement concepts.
- Deliberate effort to teach unweighted/bodyweight strength enhancing movements
  - **Squats, planks, sit-ups, presses (empty hands), jumping and landing**
- Opportunity to apply skills in fun, physically active games

# Upper Elementary Grades

- **Lesson Format**
  - Warm-Up (3-5 minutes)
  - Focus (5-8 minutes)
  - WOD (5-10 minutes)
  - Game/Activity (10-15 minutes)



# Upper Elementary Grades

## Example Warm-ups

3x or 5:00:

- Duck walk => forward roll => crab walk => forward roll => balance beam or straight line traverse => 25-meter high-knee skip => 25-meter pocket kickers

3x or 5:00:

- Zigzag bear crawl => 5 super-slow squats => 5-10 seconds in the bottom of the squat => 5 hollow rocks => 5 supermen => 10 jumping jacks => 25-meter high-knee skip => 25-meter side shuffle

# Skills Focus

- **Foundational Movements**

- Bar Play, pull-ups and progressions
- Box Jump and progressions
- Broad Jump
- Burpee and Floppy
- Forward Roll
- Plank
- Push-Up
- Running
- Shoulder Press
- Sit-Up
- Skipping
- Squat
- Wall Walk-Up

- **Secondary Movements**

- Front Squat
- Handstands and progressions
- Pull-Up
- Push Press
- Thruster

- **Advanced Movements and Fundamental Concepts**

- Deadlift
- Handstand Push-Ups
- Hang Clean
- Macro Nutrition (Protein, Carbohydrate, Fat)
- Sumo Deadlift High Pull

# Skills Focus

- Taught using developmentally appropriate progressions
- Weightlifting movements are taught with empty hands
- Progress to unweighted implements (PVC dumbbells), then light (3-5 lb) dumbbells
- Typically do not use barbells at this level

# Workout of the Day (WOD)

- Usually 5-10 minutes in duration
- Students keep score, but just for fun – No ‘winners’ or ‘losers’

- Examples:

AMRAP (5-8 minutes)

5 push-ups

10 squats

15 sit-ups

12-9-6 reps of:

Hurdle or PVC pipe-  
facing burpees

Squats

# More WOD Examples

Divide class into groups of three;  
rotate when runners are done:

- 1) Run 2 laps around cone track
- 2) Box jumps
- 3) Air squats

7 rounds for time,  
unloaded:

- 7 push presses
- 7 pull-ups
- 7 mountain climbers

For time:

- 8 squats
- 8 burpees
- 8 lunges
- 8 wall ball shots
- 8 sit-ups
- 8 box jumps
- 8 push presses
- 8 tuck jumps

AMRAP (5-8 minutes), teams  
of 2-3, only one person  
working at a time:

- 15 front squats
- 15 push-ups
- 15 box jumps

# Game / Activity

- Most of the games in the CF Kids curriculum are modifications of traditional PE games
  - Increased emphasis on fitness
- While some games are excellent, unfortunately many games exhibit “PE Hall of Shame” qualities
  - Elimination format
  - Too much waiting time
  - Large group format





# Game / Activity

Analysis of the SHAPE National Standards suggests the CF Kids curriculum does not adequately address:

- S1.E5 Dance
- S1.E13-S1.26 Manipulative skills
  - Throwing
  - Catching
  - Kicking & dribbling
  - Volleying & striking



# Suggested Modified Lesson Format

- Warm-Up (3-5 minutes)
- Skill Focus (5-8 minutes)
  - **CrossFit foundational & advanced movements & concepts**
- WOD (5-10 minutes)
- Skill / Activity (10-15 minutes)
  - **Motor skills, movement concepts, and application activities**
  - **Focus on manipulative skills, dance, and other non-locomotor skills**

# National Standards Alignment

## Standard 1. Demonstrates competency in a variety of motor skills and movement patterns.

- Locomotor
  - S1.E1 Hopping, galloping, running, sliding skipping, leaping
  - S1.E2 Jogging, running
  - S1.E3 Jumping & landing, horizontal
  - S1.E4 Jumping & landing, vertical
- Not addressed:
  - S1.E5 Dance
  - S1.E6 Combinations
- Nonlocomotor (stability)
  - S1.E7 Balance
  - S1.E8 Weight transfer
  - S1.E9 Weight transfer, rolling
  - S1.E10 Curling & stretching; twisting & bending
  - S1.E12 Balance & weight transfers
- Not addressed:
  - S1.E11 Combinations
- Manipulative
  - S1.E27 Jumping rope
- Not addressed:
  - S1.E13 - S1.E26s

# National Standards Alignment

## **Standard 2. Applies knowledge of concepts, principles, strategies and tactics related to movement and performance.**

- S2.E1 Space
- S2.E2 Pathways, shapes, levels
- S2.E3 Speed, direction, force
- S2.E4 Alignment & muscular tension
- S2.E5 Strategies & tactics

## **Standard 3. Demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.**

- S3.E1 Physical activity knowledge
- S3.E2 Engages in physical activity
- S3.E3-E4 Fitness Knowledge
- S3.E5 Assessment & program planning
- S3.E6 Nutrition

# National Standards Alignment

- Standard 4. Exhibits responsible personal and social behavior that respects self and others.
  - S4.E1-E2 Personal responsibility
  - S4.E3 Accepting feedback
  - S4.E4 Working with others
  - S4.E5 Rules & etiquette
  - S4.E6 Safety
- Standard 5. Recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.
  - S5.E1 Health
  - S5.E2 Challenge
  - S5.E3 Self-expression & enjoyment
  - S5.E4 Social interaction

# CrossFit in Middle School & High School PE



# MS/HS Lesson Format

## **50-minute class to consist of the following:**

- 5-10-minute warm-up
- 15-minute skill work and new movement development
- 10-20-minute workout
- 10-minute skill work/ challenge/game
- 10-minute cool down/ stretching /discussion review of skill work



# Warm-up

- Simple activities to raise body temperature, prepare body for more intense exercise, and practice/reinforce previously learned skills
- Examples
  - 3x or 5:00: Forward roll => 25-meter bear crawl => 50-meter run => 50-meter sprint
  - 3x or 5:00: 100-meter run => 25-meter side shuffle => 25-meter back pedal => 25-meter side shuffle => 25-meter heel kickers => 5 good squats)





# Skills

Skills are organized into 4 progressively more difficult/complex blocks.

## **Block A (9 lessons)**

Squat  
Shoulder Press  
Deadlift  
Plank  
Push-Up  
Pull-Up  
Sit-Up  
Forward Roll  
L-Sits  
Box Jump  
Broad Jump

## **Block B (9 lessons)**

Front Squat  
Push Press  
Thruster  
Sumo Deadlift High  
Pull  
Deadlift  
Cartwheel  
Frog Stands  
Burpees/Floppies  
Handstand

## **Block C (12 lessons)**

Push Press  
Overhead Squat  
Hang Clean  
Pull-Overs  
Handstand Push-Ups

## **Block D (Advanced work – 10 lessons)**

Power Clean  
Hang Power Snatch  
Power Snatch  
Muscle-Up  
Lever (progressions)  
Planche  
(progressions)

# Skills

- **New skills are introduced after the warm-up**
- **Weightlifting movements can be taught with empty hands or PVC pipe “barbells”**
  - Students must demonstrate good form with PVC before they are allowed to use weight
  - This is a powerful motivator for many students to practice and learn good form – Erik Laney, Middle school PE teacher, Murphy, NC

# WOD

- For each class, several beginning- and advanced-level WODs are provided
  - Allows teachers to revisit lessons/skills, but provide a different WOD
  - For each WOD, a Varsity, Junior Varsity, and Novice Scaling are provided
  - Middle school and high school WODs are provided



# Middle School Beginner WODs

- Skill Focus: Shoulder Press

## Varsity:

5 Rounds  
200-Meter Run  
10 Shoulder Presses, 15-20 lb

## Junior Varsity:

4 Rounds  
200-Meter Run  
10 Shoulder Presses, 10-12 lb

## Novice:

3 Rounds  
200-Meter Run  
10 Shoulder Presses, 5-8 lb

## Varsity:

3 Rounds  
10 Shoulder Presses, 15-20 lb  
20 Squats  
100-Meter Run

## Junior Varsity:

3 Rounds  
10 Shoulder Presses, 10-15 lb  
20 Squats  
75-Meter Run

## Novice:

3 Rounds  
10 Shoulder Presses, PVC-5 lb  
15 Squats  
50-Meter Run

# High School Beginner WODs

- Skill Focus: Shoulder Press

## Varsity:

5 Rounds

300-Meter Run

10 Shoulder Presses, Boys 65  
lb/Girls 45 lb

## Junior Varsity:

5 Rounds

300-Meter Run

10 Shoulder Presses, 35 lb

## Novice:

5 Rounds

200-Meter Run

10 Shoulder Presses, 10-25 lb

## Varsity:

3 Rounds

10 Shoulder Presses, Boys 95 lb/

Girls 65 lb

20 Squats

100-Meter Run

## Junior Varsity:

3 Rounds

10 Shoulder Presses, 45-55 lb

20 Squats

100-Meter Run

## Novice:

3 Rounds

10 Shoulder Presses, 10-25 lb

20 squats

50-Meter Run

# Advanced WODs

## Varsity:

3 Rounds

5 Manmakers, Boys 35 lb dumbbells/  
Girls 25 lb dumbbells

30 Squats

400-Meter Run

## Junior Varsity:

3 Rounds

5 Manmakers, 20 lb dumbbells

30 Squats

400-Meter Run

## Novice:

3 Rounds

5 Manmakers, 15 lb dumbbells

30 Squats

200-Meter Run

## Varsity:

5 Rounds

10 Shoulder Presses, Boys 95 lb/  
Girls 65 lb

20 Squats

100-Meter Run

## Junior Varsity:

5 Rounds

10 Shoulder Presses, 45-55 lb

20 Squats

100-Meter Run

## Novice:

4 Rounds

10 Shoulder Presses, 10-25 lb

20 squats

50-Meter Run

# Post WOD Skill Focus

## Options

- Review/apply that day's skill
- Skill/performance challenges
  - Ex., Have each student record three broad jump attempts
- Introduce new gymnastic skills
- Journal writing
  - Reflections
  - Goal setting / progress evaluations
  - Nutrition



# Middle School Standards Alignment

- **Standard 1. Demonstrates competency in a variety of motor skills and movement patterns.**
  - S1.M1-M23 not addressed
- **Standard 2. Applies knowledge of concepts, principles, strategies and tactics related to movement and performance.**
  - S2.M1-M11, M13 not addressed
- The middle school Standard 1 & 2 outcomes are almost entirely focused on sport-specific activities, addressing sports using a teaching games for understanding framework (invasion games, net/wall games, etc.).
- “Due to the introduction of formal tactics and strategies in middle school, the emphasis is on games and sports at this level. It’s essential, however, to include a wider variety of physical activity in the curriculum to support interests of all students and address the breadth of the outcomes” (SHAPE National Standards, p. 42).



# Middle School Standards Alignment

- **Standard 3. Demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.**
  - S3.M1 Physical activity knowledge
  - S3.M2-S3.M5 Engages in physical activity
  - S3.M6-S3.M14 Fitness knowledge
  - S3.M15-S3.M16 Assessment & program planning
  - S3.M17 Nutrition
  - S3.M18 Stress Management

# Middle School Standards Alignment

- **Standard 4. Exhibits responsible personal and social behavior that respects self and others.**
  - S4.M1-S4.M2 Personal responsibility
  - S4.M3 Accepting feedback
  - S4.M4-S4.M5 Working with others
  - S4.M6 Rules and etiquette
  - S4.M7 Safety
- **Standard 5. Recognizes the value of physical activity for health, enjoyment, challenge, self expression and/or social interaction.**
  - S5.M1-S5.M2 Health
  - S5.M3 Challenge
  - S5.M4-S5.M5 Self-expression and enjoyment
  - S5.M6 Social interaction

# High School Standards Alignment

- **Standard 1. Demonstrates competency in a variety of motor skills and movement patterns.**
  - S1.H3 Fitness Activities
    - Demonstrates competency in 2 or more specialized skills in health-related fitness activities. (S1.H3.L2)
  - Not addressed:
    - S1.H1 Lifetime activities (encouraged but not directly addressed)
    - S1.H2 Dance & rhythms



# High School Standards Alignment

- **Standard 2. Applies knowledge of concepts, principles, strategies and tactics related to movement and performance.**
  - S2.H1-S2.H3 Movement concepts, principles & knowledge
    - Applies the terminology associated with exercise and participation in selected individual-performance activities, dance, net/ w all games, target games, aquatics and/or outdoor pursuits appropriately. (S2.H1.L1)
    - Uses movement concepts and principles (e.g., force, motion, rotation) to analyze and improve performance of self and/or others in a selected skill. (S2.H2.L1)
    - Creates a practice plan to improve performance for a self-selected skill. (S2.H3.L1)
  - Not addressed:
    - S2.H4 (Dance)

# High School Standards Alignment

- **Standard 3. Demonstrates the knowledge and skills to achieve a health-enhancing level of physical activity and fitness.**
  - S3.H1-S3.H5 Physical activity knowledge
  - S3.H6 Engages in physical activity
  - S3.H7-S3.H9 Fitness knowledge
  - S3.H11-S3.H12 Planning for future
  - S3.H13 Nutrition
  - S3.H14 Stress management
- **Not addressed:**
  - S3.H10 (Target heart rate)



# High School Standards Alignment

- **Standard 4. Exhibits responsible personal and social behavior that respects self and others.**
  - S4.H1 Personal responsibility
  - S4.H2 Rules & etiquette
  - S4.H3 & S4.H4 Working with others
  - S4.H5 Safety
- **Standard 5. Recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.**
  - S5.H1 Health
  - S5.H2 Challenge
  - S5.H3 Self expression & enjoyment
  - S5.H4 Social interaction

# Success Stories



# Savannah Christian Preparatory School

- Implemented CF Kids curriculum for grades K-12 in 2013.
- “Some have been fearful that a CrossFit Kids implementation would create a hyper-competitive environment that might exacerbate the exclusion of the less athletic students. My experience was the opposite: as my kids were counting each other’s reps and had the chance to cheer for success, they became more equal.”
- “What we have seen with our CrossFit Kids implementation is that kids recognize the value in the program and, just as they do in math or English, they treat their P.E. time like it matters.”
- “Our kids have learned things like goal setting and how to deal with adversity, which they can now apply not only in the traditional classroom but also in every aspect of their lives.”



# Noble Network Charter Schools

Highlight learning in the affective domain

- Life lessons
- Personal and social responsibility
- “[Physical education is] about going through real-life situations to better yourself and be prepared for anything. For example, my gym class is more about working together as a group and reacting to problems, learning from failure.”



# Rancho High School

- Started using CF in PE in 2010.
- Van Buren, the PE teacher, teaches 5 CF classes each day.
- CF classes have a waiting list.



# Rancho High School

- “I wait all day for CrossFit class,” said student Eddie Calahan. “When I come here, I get to escape every stress I have going on in life, work out and be with my friends.”
- “They push each other to be their very best,” Van Buren said. “They want to be role models for each other, and they aren’t afraid to coach each other in every workout.”
- “I like to think of my assignments like they are a CrossFit workout,” said Elijah Abram, senior and Rancho CrossFit Club president. “It has helped me a lot with my mental strength and not being lazy.”

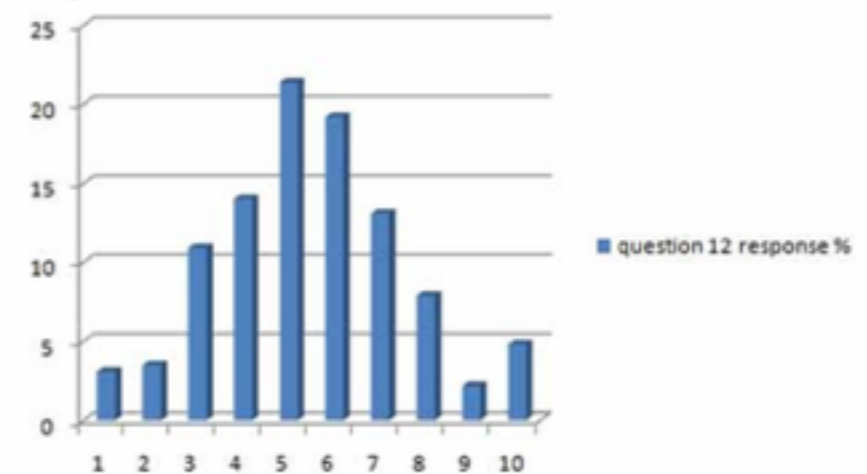
# Saratoga High School

- All high school PE classes are CrossFit classes. Students need 4 semesters to graduate.
- Collected data on student attitudes towards fitness and CrossFit.
  - 86 percent of respondents agree that the new class is challenging, and over 90 percent agree that it is tiring.
  - 86.2 percent of respondents agreed with the statement, “I am stronger.”
  - Many students also reported being faster (62.1 percent), more flexible (38.9 percent), more agile (35 percent) and more knowledgeable (33 percent).
  - Many report that they think more about what they eat (32 percent), and a significant number report sleeping better (24.6 percent) and improved ability to focus in school (24.1 percent).

# Saratoga High School

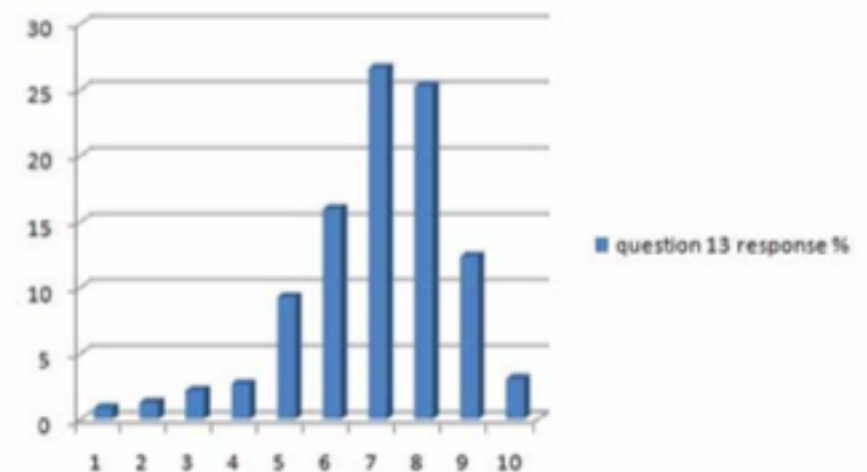
- **“How would you rate your level of physical fitness?”**
- In August 2010, most students rated their fitness at a 5 or 6.
- In January 2011, most students rated their fitness as a 7 or 8.

“How would you rate your level of physical fitness at the beginning of the semester?”  
(August 2010)



*In August 2010, many students rated their fitness at a 5 or 6.*

“How would you rate your current level of physical fitness?” (January 2011)



*In January 2011, more students rated their fitness as a 7 or 8.*

# Saratoga High School

- “This class is a refreshing break from the classes I have taken in the past, where the focus is not particularly on strength, but on skills in different sports. I really enjoyed this class and would love to take it again.”
- “This class is new to me. I can at least do something rather than nothing like the old P.E.”
- “It is very effective. I have really noticed improvements in terms of flexibility and muscle.”
- “It is really fun and I like going to PE, and at the end of the period I am in fact tired and I am improving day by day.”
- “I like this workout. I feel healthy yet not tired. That’s weird I guess.”

# Conclusions

- **The following K-12 standards can be fully achieved using CrossFit as the physical education curriculum:**
  - Standard 3. Demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.
  - Standard 4. Exhibits responsible personal and social behavior that respects self and others.
  - Standard 5. Recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.
- **CrossFit provides a strong framework for addressing fitness skills and knowledge, as well as addressing personal and social responsibility and valuing physical activity.**

# Conclusions



- **The following K-12 standards can be partially achieved using CrossFit as the physical education curriculum:**
  - Standard 1. Demonstrates competency in a variety of motor skills and movement patterns.
  - Standard 2. Applies knowledge of concepts, principles, strategies and tactics related to movement and performance.
- **CrossFit should be supplemented with other content in order to develop competence in in a variety of sports, lifetime activities, and dance.**



# Conclusions

- **Strategies for achieving Standards 1 & 2 with CrossFit.**
  - At elementary level, class time can be split between fitness activities and skill activities.
  - At secondary level, and alternating day (A/B) schedule can be used, with sports or lifetime activities covered on alternating days.
  - CrossFit could be taught as a stand-alone unit, with other sport or lifetime activities taught during the school year.



# Questions?

