



Bringing Challenge to the Afterschool Classroom: Understanding Project-Based Learning

April 19, 2013



The Whole Child Initiative

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THE WHOLE CHILD INITIATIVE

ASCD helps educators, families, community members, and policymakers move from a vision about educating the whole child to sustainable, collaborative action. Join us, and together we'll change the face of education policy and practice.

- [Whole Child Network](#)
- [Vision in Action](#)
- [Whole Child Virtual Conference](#)
- [Blog](#)
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- [Partners](#)

[Whole Child Website](#)

Learn more about each tenet:

[Healthy](#) | [Safe](#) | [Engaged](#) | [Supported](#)
[Challenged](#) | [Sustainable](#)



SCHOOL IMPROVEMENT TOOL

ASCD School Improvement Tool

Designed for use in schools and districts around the world, the free [ASCD School Improvement Tool](#) offers educators a comprehensive and completely online needs assessment.

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The Whole Child Initiative

The demands of the 21st century require a new approach to education to fully prepare students for college, career, and citizenship. Research, practice, and common sense confirm that a whole child approach to education will develop and prepare students for the challenges and opportunities of today and tomorrow by addressing students' comprehensive needs through the shared responsibility of students, families, schools, and communities.

All educators want to improve the work they do for students, their families, and the community. Whether it's instruction, school climate, leadership, family engagement, or any of the other issues schools face on a daily basis, all educators need tools to help them improve their actions and methods. A whole child approach, which ensures that each student is healthy, safe, engaged, supported, and challenged, sets the standard for comprehensive, sustainable school improvement and provides for long-term student success.

Launched in 2007, ASCD's Whole Child Initiative is an effort to change the conversation about education from a focus on narrowly defined academic achievement to one that promotes the long term development and success of children. Through the initiative, ASCD helps educators, families, community members, and policymakers move from a vision about educating the whole child to sustainable, collaborative action. ASCD is joined in this effort by [Whole Child Partner](#) organizations representing the education, arts, health, policy, and community sectors.

Explore resources and opportunities for action here and on www.wholechildeducation.org. Download [Indicators](#) (PDF) of a whole child approach to education and community engagement and use the [ASCD School Improvement Tool](#) to assess your performance on those indicators. Join ASCD and our partners, and together we'll change the face of education policy and practice.

Whole Child Tenets

- Each student enters school **healthy** and learns about and practices a healthy lifestyle.
- Each student learns in an environment that is physically and emotionally **safe** for students and adults.
- Each student is actively **engaged** in learning and is connected to the school and broader community.
- Each student has access to personalized learning and is **supported** by qualified, caring adults.
- Each student is **challenged** academically and prepared for success in college or further study and for employment and participation in a global environment.

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10 Challenged Indicators

Whole Child Tenet #5

CHALLENGED

Each student is challenged academically and prepared for success in college or further study and for employment and participation in a global environment.

WWW.WHOLECHILDEDUCATION.ORG

INDICATOR	COMPONENT	INDICATOR	COMPONENT
EACH student in our school has access to challenging, comprehensive curriculum in all content areas.	<ul style="list-style-type: none"> ✓ School Climate & Culture ✓ Curriculum & Instruction Community & Family Leadership ✓ PD & Capacity Assessment 1	OUR curriculum and instruction provide opportunities for students to develop critical-thinking and reasoning skills, problem-solving core tactics, and technology proficiency.	<ul style="list-style-type: none"> School Climate & Culture ✓ Curriculum & Instruction Community & Family Leadership ✓ PD & Capacity Assessment 2
OUR school collects and uses qualitative and quantitative data to support student academic and personal growth.	<ul style="list-style-type: none"> School Climate & Culture Curriculum & Instruction Community & Family Leadership ✓ PD & Capacity ✓ Assessment 3	OUR curriculum, instruction, and assessment demonstrate high expectations for each student.	<ul style="list-style-type: none"> School Climate & Culture ✓ Curriculum & Instruction Community & Family Leadership PD & Capacity ✓ Assessment 4
OUR school works with families to help all students understand the connection between education and lifelong success.	<ul style="list-style-type: none"> School Climate & Culture Curriculum & Instruction ✓ Community & Family Leadership PD & Capacity Assessment 5	OUR curriculum and instruction include evidence-based strategies to prepare students for further education, career, and citizenship.	<ul style="list-style-type: none"> School Climate & Culture ✓ Curriculum & Instruction ✓ Community & Family Leadership PD & Capacity Assessment 6
OUR extra-curricular, co-curricular, and community-based programs provide students with experiences relevant to higher education, career, and citizenship.	<ul style="list-style-type: none"> ✓ School Climate & Culture Curriculum & Instruction ✓ Community & Family Leadership PD & Capacity Assessment 7	OUR curriculum and instruction develop students' global awareness and competencies, including understanding of language and culture.	<ul style="list-style-type: none"> School Climate & Culture ✓ Curriculum & Instruction Community & Family Leadership PD & Capacity Assessment 8
OUR school monitors and assesses extra-curricular, co-curricular, and community-based experiences to ensure students' academic and personal growth.	<ul style="list-style-type: none"> School Climate & Culture Curriculum & Instruction Community & Family ✓ Leadership PD & Capacity ✓ Assessment 9	OUR school provides cross-curricular opportunities for learning with and through technology.	<ul style="list-style-type: none"> School Climate & Culture ✓ Curriculum & Instruction Community & Family Leadership ✓ PD & Capacity Assessment 10

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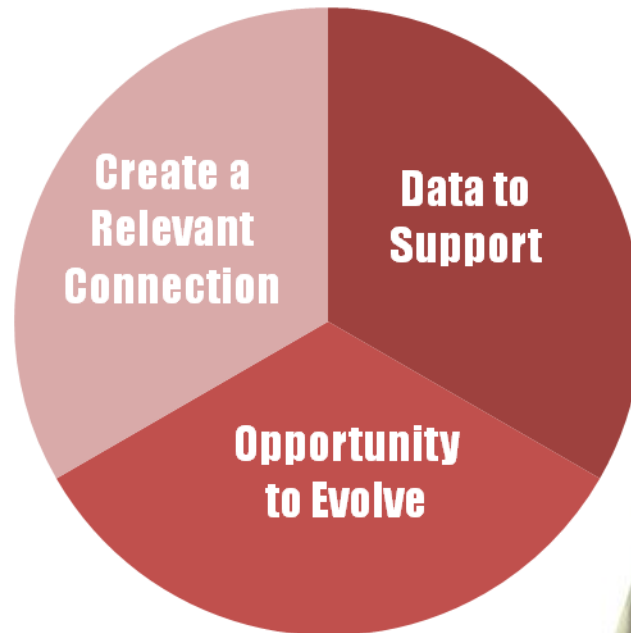
www.ascd.org

Connection to Afterschool

Indicator 2: Provide opportunities for students to develop critical thinking and reasoning skills

Indicator 3: Use qualitative and quantitative data to support students' academic and personal growth

Indicator 7: Community-based programs provide students with experiences relevant to higher education, career and citizenship



Project-Based Learning is Not ...



Project-Based Learning is Not ...



Project-Based Learning is Not...



Project-Based Learning is Not ...



=

**Project-
Oriented
Learning**

Key Elements of Project-Based Learning

- Teaches significant content**
- Requires critical thinking, problem solving, collaboration and various forms of communication**
- Is organized around an open-ended driving question**
- Incorporates essential educational content**
- Allows for student voice and choice**
- Provides a process for purposeful reflection**

Project Planning Guides

www-foundationsinc.org

INVESTIGATION PROJECTS PLANNING CHECKLIST

Is the topic driven by children's interests? Y N

Comments: _____

Do they already know something about it? Y N

Comments: _____

Are there real learning opportunities? What? _____

Does it bring together different content areas? Which content areas are most important? _____

What can the end product be? _____

Does it build on lots of hands-on activities? _____

Can the topic be investigated without a lot of adult help? _____

Is it realistic? Should it be modified to make it more realistic? _____

Can the community be involved? How? _____



Project Planning Guides

Spotlight Project: Projectile Motion

PROJECT OVERVIEW						page 1	
Name of Project:	Projectile motion			Duration:	2 weeks		
Subject/Course:	math (Algebra II/Trigonometry)			Grade Level:	11		
Other Subject Areas to Be Included:	Physics						
Project Idea Summary of the challenge, investigation, scenario, problem, or issue:	Students work in teams to design and construct a ballistic device that launches an object in a flight path that follows a parabola. They use low cost materials (PVC pipe, plywood, rubber bands, etc.) to build the device, which must be capable of repeated firings. Students use knowledge of quadratic functions in order to hit a target. Each team conducts multiple tests and use the data they record to redesign their device if needed. Students make an oral presentation using PowerPoint slides to summarize their findings.						
Driving Question	How can we build a device to launch a projectile, and calculate its motion in order to hit a target?						
Content and Skills Standards to be addressed:	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Use two-dimensional equations of motion for projectile motion to calculate initial velocity, time in the air, horizontal distance and maximum height. • Use trigonometry to resolve two-dimensional vectors into its vertical and horizontal components 			<ul style="list-style-type: none"> • Graph quadratic equation and find x-intercepts, y-intercepts and vertex • Apply factoring, quadratic formula and graphing calculator to find x-intercepts of a quadratic graph <p>CA Content Standards - Algebra II: 8.0, 10.0; Trigonometry: 12.0, 19.0; Physics: ii, ij</p>			
21st Century Skills explicitly taught and assessed (T+A) or encouraged by project work, but not taught or assessed (E):	Collaboration	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other: Critical and Creative Thinking; Problem Solving		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Presentation	<input checked="" type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
	Critical Thinking:	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Culminating Products & Performances	Group:	Design Proposal Complete Ballistic Device main Test Report		Angles of Elevation Report Oral Presentation		Presentation Audience: <input type="checkbox"/> Class <input type="checkbox"/> School <input type="checkbox"/> Community <input type="checkbox"/> Experts <input type="checkbox"/> Web <input type="checkbox"/> Other: _____	
	Individual:						

PBL ST. PLANNING AND PREPARING / 77

www.bie.org

Convergent vs. Divergent Questions

Convergent questions are “close-ended” and based on factual information

- **Have one “right” answer, often “yes” or “no”**
- **The questioner usually has the answer in mind**
- **Common in tests**

Divergent questions are “open-ended” and do not have a single right answer

- **Have a range of possible responses**
- **The questioner does not necessarily have a correct answer in mind**
- **Stimulate conversation**

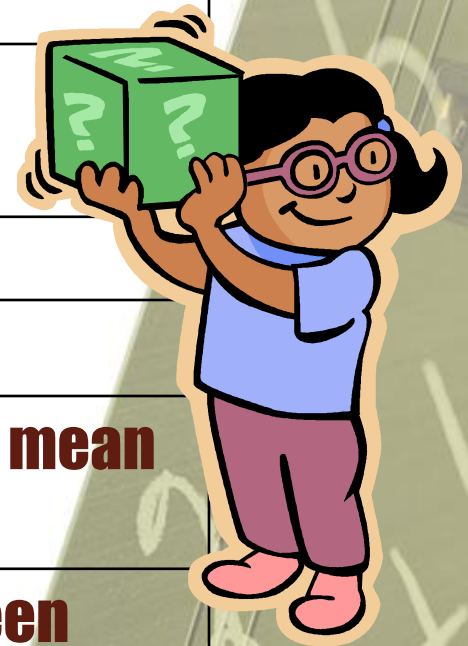
What is a Driving Question?



Drafting a Driving Question

Weak:	What is an ecosystem?
Better:	How do scientists analyze the ecosystem?
Best:	How do human beings “compete” in an ecosystem?

Weak:	What is the history of our neighborhood?
Better:	What does the history of our neighborhood mean to its current residents?
Best:	How have our attitudes and experiences been shaped by our neighborhood?



Projects to Products



Incorporating Academic Strategies

- **Include findings of student assessments**
- **Reinforce essential academic content**
- **Combine cross curricular standards**
- **Integrate various learning styles**



Understanding and Practice

Goal	Increase reading scores
Academic Content	Understanding literary language used in texts (ex. simile, metaphor, rhyme, rhythm, alliteration)
Driving Question	How does literature reflect the times in which it was written?
Lesson Planning Topic	Four Purposes of Writing
Group Discussion	Was Shakespeare a rapper?
Content Areas	Reading, History, Math, Social Studies, Art
Career Connection	How do I write persuasively to influence my audience?



Assessment Strategies

- **Observation of the project's work or progress**
- **Group evaluation**
- **Self-evaluation**
- **Pre/post testing**
- **Personal portfolios**
- **Checklists and logs**



1. Taking Responsibility for One's Own Learning and Performance

NOT PROFICIENT

- Student does not take responsibility for or does not complete his/her tasks within the group (e.g., does not make an effort to do high-quality, on-time work)
- Student is often off-task or disengaged (e.g., doesn't say much; isn't listening attentively; isn't doing related work)
- Student does not use feedback in a constructive way (e.g., becomes defensive, does not use feedback from others to improve his/her work or understandings)

◀ NP ----- Approaching ----- P ▶

◀ NP ----- Approaching ----- P ▶

◀ NP ----- Approaching ----- P ▶

NP = Not proficient P = Proficient

PROFICIENT

- ✦ Student takes responsibility for and completes his/her tasks within the group (e.g., making an effort to do high-quality, on-time work)
- ✦ Student is on-task and engaged in whatever the group is doing/discussing (e.g., is contributing relevant knowledge, opinions, and skills; is listening attentively to others)
- ✦ Student uses feedback in a constructive way (e.g., does not become defensive, uses feedback from others to improve his/her work or understandings)

Notes:

____ Points earned / ____ Points possible

2. Maximizing Group Task Performance

NOT PROFICIENT

- Student does not pay attention to the quality of the work and understanding of other members and of the group as a whole
- Student does not use discussion facilitation strategies for improving the effectiveness the group's task-related conversations (e.g., does not summarize comments, ask for clarification, build consensus)
- Student does not use project management strategies — when applicable — for improving the effectiveness of the group's work on the task (e.g., does not create timelines; identify or set goals; prioritize and allocate tasks; organize resource-gathering; monitor progress; keep group on task)

◀ NP ----- Approaching ----- P ▶

◀ NP ----- Approaching ----- P ▶

◀ NP ----- Approaching ----- P ▶

NP = Not proficient P = Proficient

PROFICIENT

- ✦ Student pays attention to the quality of the work and understanding of other members and of the group as a whole, taking action to improve it when appropriate (e.g., offering feedback/assistance to others)
- ✦ Student uses discussion facilitation strategies for improving the effectiveness the group's task-related conversations (e.g., summarizes comments, asks for clarification, builds consensus)
- ✦ Student uses project management strategies — when applicable — for improving the effectiveness of the group's work on the task (e.g., creates timelines; identifies or sets goals; prioritizes and allocates tasks; organizes resource-gathering; monitors progress; keeps group on task)

Notes:

____ Points earned / ____ Points possible

3. Managing Social Relations

NOT PROFICIENT

- Student generally does not show respect for the ideas, opinions, values and feelings of other group members (e.g., is rude, does not acknowledge what others have to say, uses putdowns)
- Student is generally not able to work well with diverse group members (e.g., withdraws, is uncooperative, causes conflict)
- Student does not actively encourage group cohesion (e.g., does not help manage/resolve conflict within the group; does not set a positive tone in words and actions)

◀ NP ----- Approaching ----- P ▶

◀ NP ----- Approaching ----- P ▶

◀ NP ----- Approaching ----- P ▶

NP = Not proficient P = Proficient

PROFICIENT

- ✦ Student consistently shows respect for the ideas, opinions, values, and feelings of other group members (e.g., is polite, acknowledges what others have to say, offers only constructive criticism — no put-downs)
- ✦ Student works well with diverse group members; cooperates and does not cause conflict
- ✦ Student actively encourages group cohesion (e.g., by helping to manage/resolve conflict within the group or by setting a positive tone in words and actions)

Notes:

____ Points earned / ____ Points possible

21ST CENTURY SKILLS ASSESSMENT RUBRIC: PRESENTATION

Part I—Individual Components*

1. Style of Presentation

NOT PROFICIENT

- Student does not choose the style of presentation most appropriate for its goals (e.g., is too informal or does not take it seriously)
- Student does not adjust wording, style of delivery, and the amount and kind of information communicated to fit the needs of the specific audience (e.g., says too little or too much, or uses unfamiliar terms and concepts without explaining them)

←NP----- Approaching -----P→

←NP----- Approaching -----P→

NP = Not proficient P = Proficient

PROFICIENT

- + Student chooses the style of presentation most appropriate for its goals (e.g., to persuade, inform, explain, entertain)
- + Student adjusts wording, style of delivery, and the amount and kind of information communicated to fit the needs of the specific audience (e.g., does not say too little or too much, or use unfamiliar terms and concepts without explaining them)

Notes:

____ Points earned / ____ Points possible

2. Delivery (appearance, voice, eye contact)

NOT PROFICIENT

- Student does not have appropriate body posture, movement, use of gestures, or attire
- Student's voice is too quiet or unclear; delivery may be too rushed and/or have interruptions, hesitations, or excessive use of filler words (e.g., "um," "you know," "so...")
- Student does not make frequent eye contact (e.g., screen or notes are read or referred to excessively, without looking at audience)

←NP----- Approaching -----P→

←NP----- Approaching -----P→

←NP----- Approaching -----P→

NP = Not proficient P = Proficient

PROFICIENT

- + Student has appropriate body posture, movement, use of gestures, and attire
- + Student's voice is consistently audible and clear; delivery is not too rushed and is without interruptions or hesitations, with minimal use of filler words (e.g., "um," "you know," "so...")
- + Student makes frequent eye contact (e.g., if notes are used they are only glanced at)

Notes:

____ Points earned / ____ Points possible

3. Response to Questions (from audience or teacher)

NOT PROFICIENT

- Student does not have a response or the response is not precise or to the point of the question (e.g., too brief or long, or off topic)
- Student does not respond appropriately to questions that are unclear or problematic (e.g., is impolite in his/her response, gives an answer that shows the question was misunderstood, or tries to give an answer even though he or she does not know enough)

←NP----- Approaching -----P→

←NP----- Approaching -----P→

NP = Not proficient P = Proficient

PROFICIENT

- + Student's response is precise and to the point of the question (e.g., not too brief or long, or off topic)
- + Student responds appropriately to questions that are unclear or problematic (e.g., politely asks clarifying questions, repeats or rephrases questions to be sure of understanding, explains that the question is beyond the scope of the project and would require more research)

Notes:

____ Points earned / ____ Points possible

* If group presentations are given, each group member (presenter) is typically scored individually on each of these dimensions.

Managing Your Project Roles

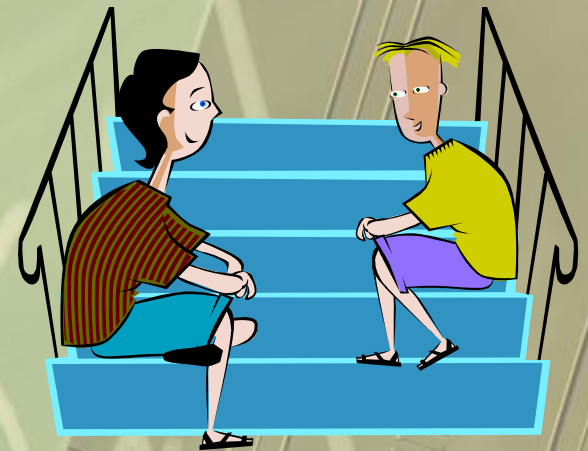
- ✓ **Director** – develop specific learning experiences to meet goals including providing limits and guidelines
- ✓ **Guide** – assist in planning the process, monitor progress
- ✓ **Coach** – give suggestions when needed and help when asked
- ✓ **Co-learner** – explore areas that are new to you
- ✓ **Cheerleader** – offer encouragement and support

Managing the Group's Project Roles

- ✓ **Group Leader** – keeps the group on task and helps to organize the process
- ✓ **Timekeeper** – keeps the group on schedule
- ✓ **Recorder** – takes minutes and drafts reports
- ✓ **Observer** – uses a tool to monitor daily activities
- ✓ **Researcher** – collects data and information
- ✓ **Spokesperson** – communicates on behalf of the group
- ✓ **Controller** – organizes and coordinates resources

Make Time for Reflection

- **Daily project logs using technological tools**
- **Weekly status reports that detail progress**
- **Rubrics that address growth and development**
 - **Academics**
 - **Team collaboration**
 - **Critical thinking and reasoning skills**
- **Oral presentations**
- **Roundtable discussions**



Reflection Log



PROJECT WORK REPORT: INDIVIDUAL		
Project Name:		
Student Name:		Date:
For the Time Period:	Day(s): _____ Week: _____	
During this time period I had the following goals for project work:	1	
	2	
	3	
	4	
	5	
During this time period I accomplished...	1	
	2	
	3	
	4	
	5	
My next steps are...	1	
	2	
	3	
	4	
	5	
My most important concerns, problems or questions are...	1	
	2	
	3	
	4	
	5	

Sharing the Project

- **Make it public!**
- **Answers the driving question**
- **Showcases a product or event**
- **Demonstrates understanding of content**
- **Connects to higher learning**
- **Participation from every student**



RESOURCES:

- www.pbl-online.org
- www.bie.org
- www.y4y.ed.gov
- www.edutopia.org
- www.foundationsinc.org

