



## Policies and Procedures

<b>TITLE: FLORIDALEARNS STEM SCHOLARS SUMMER CHALLENGE CONTENT DEVELOPMENT AND DELIVERY</b>	<b>POLICY NO: FLSS - 007</b>
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### I. Purpose

To establish guidelines for content development and delivery for *FloridaLearns STEM Scholars* Summer Challenges.

### II. Scope

This procedure addresses Summer Challenge content development and delivery across the three consortia.

### III. Responsibility

Consortia personnel, project scientist, and project gifted expert will collaborate to ensure those who are qualified to development and deliver content are selected and content is accurate and appropriate for high school students who are gifted and talented.

### IV. Definitions

Project Scientist – Scientist who is also CAS faculty and holds a Ph.D. in a scientific field.  
Project Gifted Expert – Individual widely known for expertise in knowledge of characteristics of gifted students and qualities of instruction that meets needs of students who are gifted.

### V. Policy Statements

The *FloridaLearns STEM Scholars* Project will sponsor a series of Summer Challenges during each summer. Summer Challenge content will be developed by individuals, identified by the respective consortium. Each consortium will be responsible for contracting or making other binding arrangements with those who will develop and deliver Summer Challenge content. At least one member of the development team should hold a Ph.D. in a relevant STEM content area and the other developers a minimum of a master's degree in a relevant STEM content area. Content developers will adhere to a series of content formatting guidelines and the project-provided timeline.



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Content developers may also be responsible for content delivery and will reserve the first right of refusal. Content developers will be assisted by a Challenge Teacher Assistant from each district having student participants. The responsibilities of the Teacher Assistant will be outlined in the procedures section. STEM Scholars may be transported each day to the respective regional Summer Challenge or the Summer Challenge may be residential.

### VI. Procedures

#### **7.1 Selection of Summer Challenge Content Developers**

1. Consortia personnel will assume responsibility for securing qualified individuals who will develop and deliver content for Summer Challenges. This may be done through collaboration with:
  - a. Regional colleges
  - b. Universities
  - c. Other entities or agencies that offer instructional programs for students, such as the National High Magnetic Field Laboratory.
2. Content will be developed collaboratively by two or more individuals comprising a team. At least one active member of the development and delivery team should hold a Ph.D. degree in the appropriate STEM content area/s and others should have a minimum of a Master's degree in the appropriate STEM content area/s and experience teaching at a college or university level.

#### **7.2 Formatting and Development Guidelines for Summer Challenge Content**

##### **1. Rationale**

Content developed as a part of the *FloridaLearns STEM Scholars* project will be shared among Florida's three educational consortia: Panhandle Area Educational Consortium, Heartland Educational Consortium, and North East Florida Educational Consortium.

Formatting and development guidelines are to ensure all content:

1. Is detailed enough for another team to easily implement any activity as it is written.
2. Delivery strategies are based on sound instructional practices.
3. Consistently has a uniform appearance and format.



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### 2. Summer Challenge Content Manual

Content for each Summer Challenge event will be assembled into a manual. It is expected the final manual will be provided to the consortia teams in a print-ready format and in the manner described below.

#### Summer Challenge Manual Components

1. **Content Overview:** A paragraph that describes the target audience and gives a very broad and general description of the challenge content.
2. **Next Generation Sunshine State Standards or Common Core Standards:** List all standards that correlate with content. Standards may be found in the standards database at [www.floridastandards.org](http://www.floridastandards.org)
3. **Goals and Objectives:** Comprehensive numbered list of what students will learn or be able to do. These should be assembled from the objectives for each module's activities.
4. **Individual Modules:** Each module will provide the content and instructions for one-half day of content instruction and activities. Modules should be numbered consecutively 1-8.
5. **Pre- and post-tests:** Each development team should develop and provide a test that will be administered as a pre-test at the beginning of the challenge experience and post-test at the end of the experience.

### 3. Guidelines for Summer Challenge Modules

Summer Challenge Content will be divided into a series of modules that may build on each other or that may be discrete depending on the nature of the content, activities, or extensions of content.

#### General Module Design

Each module should be designed to:

1. Have a problem-solving focus and afford students opportunities to extend and apply existing content knowledge.
2. Provide content and activities for **one-half day (3.5 hours, including approximately 20 minutes of break time)**. The total number of modules is 8.
3. Involve students working on a single problem, or a series of problem-solving activities within the module's content focus.
4. Include collaboration among students, preferably in groups of no more than three.



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5. Include overlap among the areas of science, technology, engineering, and math (STEM) as much as possible.
6. Ensure instruction is innovative and allows students opportunities to **synthesize and apply** knowledge and skills.
7. Include opportunities for data collection, organization, explanation, and presentation. Students should use Excel to organize and present data as much as possible.
8. Require students to “make sense” or think about and explain their thinking based on their data.
9. Afford opportunities to present findings to a larger group. This may range from a limited number of groups sharing findings with each other to sharing with the group at large.
10. Allow time for revision or redesign.

### STEM TIPS

1. **Students enjoy competitions.**
2. **Peer-review and revision are powerful.**
3. **Use worksheets sparingly, if at all.**

### Summer Challenge Module Components

Each Summer Challenge module should include the following components and in the sequence listed:

1. **Pacing Guide** (template provided): List of topics/activities and brief description and time each segment is expected to take.
2. **Content Provider Resources and Materials** (template provided):  
Section Components:
  - a. **Activity:** name of specific activity. Please number activities according to module number and activity sequence.
  - b. **Objectives:** the expected student outcomes in terms of what they will learn, do, and understand.
  - c. **Instructions:** Step by step instructions for carrying out the activity.



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- d. **Teaching notes:** Information that will help a person, who has never conducted this activity, to complete it successfully and with little difficulty. These should include:
    - i. How to prepare any materials that require advanced preparation.
    - ii. Specific tips for running the activity smoothly.
    - iii. A summary of the typical or expected results.
  - e. **Handouts:** List of handouts needed for the activity; otherwise, write N/A.
  - f. **Materials:** Bulleted list of required materials
  - g. **References:** If the activity or a portion of the activity isn't original with you, provide appropriate attribution.
3. **PowerPoint** (template provided):  
While a PowerPoint presentation shouldn't be relied upon during delivery, a PowerPoint to scaffold the instructional sequence should be included. (Template Provided)  
In the notes section of the slides, please provide:
- a. Information that will be useful to someone else who may deliver the content.
  - b. URLs for any hyperlinks.
  - c. Appropriate citations for images, etc.
4. **Handouts** – All handouts should be referenced in each module's "Content Provider Resources and Materials" and sent as attachments.
5. **Materials Master List** (template provided): Excel spreadsheet listing:
- a. Items grouped by preferred supplier – one page per supplier
  - b. Item number
  - c. URL for item if available (most vendors have online catalogues and this will save a lot of time as the orders for all challenges are assembled). If the item is from the paper version of a supplier catalogue, please provide the page number.
  - d. Number of each item required
  - e. Unit Cost
  - f. Total Cost for each item
  - g. Budget is \$4,000.00 and the materials must be consumable items.

### **PowerPoint Guidelines**

Use the template provided. Fonts and margins are pre-set for you.

1. Avoid using shadowed fonts in headings – their appearance isn't as sharp when printed.
2. Reduce the language on the slide, keeping it as simple as possible.



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3. Provide diagrams, pictures, etc. that help tell your story and feel free to use colored fonts, shapes, and call-outs as needed.
4. Hyperlink to outside materials as needed, but reference the name and URL of the video in the notes.
  - a. Access to online videos is blocked in many school districts, so the presenter may need to download outside media onto his/her computer ahead of time.
  - b. If the link is broken, the name of the media may allow the presenter to find it at another location.
5. Add comments and explanations that will help another instructor in the notes.
6. Use APA format to appropriately cite pictures, graphs, tables, information, or other materials that are not original to you. Do this both in the footer of the slide and notes.

### General Document Formatting Details

**Font:** Cambria

**Font Size:**

- **Headings - 12 point bold**
  - **Text - 11 point**
- **Margins:**
  - **Top - 1 inch**
  - **Left and Right -1 inch**



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### Things to Consider During Module Development

#### 1. Engage

Does the activity promote curiosity, make connections between students' past and present learning experiences, expose prior conceptions, and organize students' thinking toward learning outcomes of current activities?

#### 2. Explore

Do the activities help students use prior knowledge to generate new ideas, explore questions and possibilities, and design and conduct an investigation?

#### 3. Explain

Are learners given an opportunity to explain their understanding of the concept?

#### 4. Elaborate

Do students have opportunities to apply their understanding of the concept and extend thinking by conducting additional activities?

#### 5. Evaluate

Are students and facilitators given an opportunity to determine students' progress toward achieving the educational objectives?

(Bybee et.al., 2006)



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### 4. Timeline for Content Development and Delivery

Content will be developed and delivered according to the timeline below.

#### **TIMELINE FOR CONTENT DEVELOPMENT AND DELIVERY**

Task	Completion Deadline
<b>Outline of STEM Summer Challenge Program Content due to Consortium</b>	<b>01-31-12</b>
<b>Meet with <i>FloridaLearns STEM Scholars</i> Contact to Review Content</b>	<b>01-31-12</b>
<b>Draft Versions of All Content Documents Due to <i>FloridaLearns STEM Scholars</i> Contact</b>	<b>03-22-12</b>
<b>Content Documents Submitted to PAEC for Expert Review</b>	<b>03-26-12</b>
<b>Materials List Submitted to <i>FloridaLearns STEM Scholars</i> Contact in an Excel spreadsheet</b>	<b>04-01-12</b>
<b>The spreadsheet should include:</b>	
a. Items grouped by preferred supplier – one page per supplier	
b. Item number	
c. URL for item if available (most vendors have online catalogues and this will save a lot of time as the orders for all challenges are assembled). If the item is from the paper version of a supplier catalogue, please provide the page number.	
d. Number of each item required	
e. Unit Cost	
f. Total Cost for each item	
g. Budget is \$4,000.00 and the materials must be consumable items.	
<b>Final, Copy-ready, Versions of all Content Documents Due to <i>FloridaLearns STEM Scholars</i> Contact</b>	<b>04-24-12</b>
Review content documents with other delivery personnel. Make training decisions, such as who will lead specific activities. Decide how to organize materials to maximize effectiveness and minimize time loss. Determine the role of the STEM teachers (one for each district for which you will have students). They may help with set-up	<b>05-15-12</b>



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and take down or you may want to schedule a work day with them to review content, etc. They will receive a stipend for 6 days of work and you will have students for 4 days.

**Delivery team implements *FloridaLearns STEM Scholars Summer Challenge***

**07-31-12**



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### 5. Templates for Content Developers

The templates below should be provided to content developers and the print-ready manual should be formatted based on these templates.

#### A. Pacing Guide Template

Name of Institute

#### MODULE 1

DAY 1 – AM

#### PACING GUIDE

Topic and Brief Description	Time (minutes)
Register/Housekeeping/Welcome	20
Content Pretest	60
Ice-Breaker	30
TOTAL INSTRUCTIONAL TIME	190
LUNCH	30



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### **B. Module Template**

Each module should be formatted according to the template below. Developers may use the template during the development process and then, eliminate borders and lines.

## **MODULE 1**

### **DAY 1 – AM**

#### **CONTENT PROVIDER RESOURCES AND MATERIALS (list of activities in sequence)**

<b>Activity 1.1:</b>
<b>Objectives:</b>
<b>Instructions:</b>
<b>Teaching Notes:</b>
<b>Handout:</b>
<b>Materials:</b>
<b>References:</b>
<b>Activity 1.2:</b>
<b>Objectives:</b>
<b>Instructions:</b>
<b>Teaching Notes:</b>
<b>Handout:</b>
<b>Materials:</b>
<b>References:</b>



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### C. Materials Spreadsheet Template

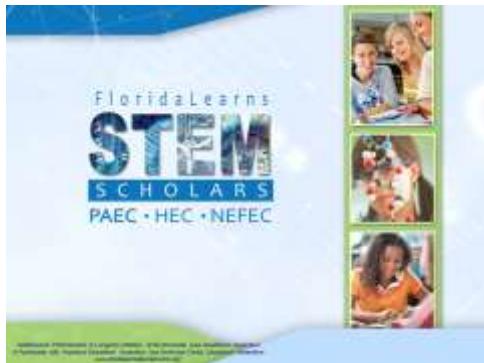
For the purpose of ensuring uniformity in materials requests and Excel spreadsheet as seen below should be provided each development team.



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### **D. PowerPoint Development Template**

To ensure uniformity in PowerPoint Design, the following template slides should be provided to and used by developers.





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### 7.3. Guidelines for Summer Challenge Content Delivery Team

1. Those who develop content will receive the option of first refusal to deliver content.
2. At least one active member of the content delivery team should hold a Ph.D. degree in the appropriate STEM content area/s and others should have a minimum of a Master's degree in the appropriate STEM content area/s and experience teaching at a college or university level.
3. The content delivery team will:
  - a. Assume responsibility for administering the Challenge pre- and post-tests, ensuring security of the test documents, and transferring the documents to consortia personnel or project evaluator.
  - b. Coordinate with consortia personnel to ensure the materials and supplies, needed for the Challenge, are onsite and set up prior to the first Challenge day.
  - c. Employ research-indicated pedagogical strategies to keep learners engaged and on task.
  - d. Relay any concerns, related to a student's inappropriate behavior or level of engagement in a professional manner to the "District Teacher Assistant."
  - e. Interface with project personnel and the personnel at the site of the Challenge.
  - f. Complete and submit invoices for work in a timely manner.

### 7.4. Summer Challenge Teacher Assistant – Selection and Duties

1. One STEM content area teacher, from each district represented at the Summer Challenge, will have the opportunity to work with the content delivery team as "District Teacher Assistant" for the duration of the Summer Challenge.
  - a. STEM Mentor teachers will receive top consideration when the "Teacher Assistant" position is filled.
  - b. In the event a district has no STEM Mentor teacher who wants to take part, project personnel will work with the district contact to find another STEM teacher willing to work with the delivery team during the Summer Challenge.
  - c. The district teacher assistant will receive a stipend of \$175.00/day for up to 6 days. Travel costs for days when the teacher assistant doesn't travel on the bus with students will be provided and based on map mileage from the teacher's home base. Class C meals are not allowable.
2. Although each Challenge is for 4 days (or 5 days, depending on consortium plans), this teacher will work with the content delivery team for additional days, if necessary. This



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time may be spent in planning, set-up, or take-down and the determination will be based on the needs of the delivery team.

3. The district teacher assistant will meet students at the pre-determined district location and travel to and from the Challenge location on the bus with students. The teacher will not leave students unattended at the drop-off site in the afternoon.
4. The district teacher assistant will assume responsibility for maintaining student permission, parent contact information, attendance, and emergency medical release forms.
5. The district teacher will assume responsibility for ensuring district-established protocol is followed. For example, if a parent must pick a child up early, what steps are required by the district? In the event of an emergency, what are the steps that should be followed?
6. The district teacher assistant will be responsible for ensuring students adhere to the code of student conduct of the home district and will serve as a liaison between the Challenge Delivery team and the local school administration in the event there is a problem with a student. Local school administration will determine appropriate action based on the district's code of student conduct.
7. The district teacher assistant will sign-in each day of work and provide consortium requested records so the stipend may be paid.
8. The teacher assistant will not be responsible for delivering or developing Challenge content.