Storytime STEM-packs: STEM + Computer Science

GRADE LEVELS:
PreK-2

EDUCATIONAL SETTING:
in school and out of school

Award Provides:
- **1 Storytime STEM + Computer Science Adventure** (choose either: Moon Adventures, Dragonland Adventures, Earth Day Adventures, Blue Girl, or Happy Planet Adventures)
- **and 1 Science or Engineering Design Storytime STEM-pack** (choose 1 from 11 titles)
- **and 1 Mathematics Storytime STEM-pack** (choose 1 from 7 titles*)

For detailed description of award, please see: Storytime STEM materials description

Additional Cost(s) to Awardee in 2023-2024:
No additional cost necessary.

Approximate Sustainability Cost After Award Period:
Refurbishment costs for consumable materials range between $10.00 and $20.00 per Storytime STEM+C Adventure, and between $ 0.00 and $12.00 per Storytime STEM-pack.

2023-2024 STEM Scale-Up Program Summary:
Storytime STEM-packs are a PreK-2 educational innovation designed to connect children's literature with STEM and computer science. They enable educators of young children to successfully incorporate age-appropriate STEM+C concepts into children's programming.

Using the storybook as context, Storytime STEM-packs present children with a phenomenon or problem. Through engagement in the practice standards for science, engineering, or mathematics, and the use of a crosscutting concept, children collaboratively explain the phenomenon or solve the problem, thereby making sense of the STEM concept. The facilitation guide offers suggestions for open-ended questions to elicit children's thinking and promote discussion.

Developed as part of a National Science Foundation I-Corps grant, Storytime STEM-packs are fun and engaging for kids, easy to use with minimal preparation time, and aligned to Next Generation Science, Common Core Mathematics Standards and CSTA Computer Science Standards, also with alignment to Iowa content and 21st century standards.

Storytime STEM-packs can be used in classrooms, as centers, in STEAM labs, as well as public libraries, STEM camps, out-of-school programs, and summer school. It takes approximately 45 minutes to complete one Storytime STEM-pack and 45 minutes to complete one learning challenge within each Storytime STEM+C Adventure. There are a total of five learning challenges in an Adventure.

Included in each Storytime STEM+C Adventure:
- 3 Storybooks
- Facilitator guides for each of the five learning challenges (each 45 min)
- Print materials
- Hands-on materials for 24 children
- 6 colorful themed vinyl mats
- 6 Bee-Bots with charging station

Included in each Storytime STEM-pack:
- 1 Storybook
- A facilitator guide with STEM-background and lesson plan (45 min)
- Print materials
- Hands-on materials for 24 children

Requirements to Implement the Program:
- Educator(s) choose 1 Storytime STEM+C Adventure and 2 Storytime STEM-packs (1 science/engineering and 1 mathematics) and attend the half-day professional development.
- A memorandum of understanding signed by the building administrator is required before materials can be delivered.
- Educator(s) must participate in the STEM Council Scale-Up Educator Survey.

Iowa Standards Alignment:
- Storytime STEM+C Adventures focus on building foundations in computational thinking/computer science in PreK-2 and integrate science, engineering design, mathematics, and 21st Century Standards including the Employability Skills:21.K-2.ES.1, 21.K-2.ES.2, 21.K-2.ES.4, 21.K-2.ES.5, and Technology Literacy: 21.K-2.TL.1, 21.K-2.TL.3, and Science Standards K-2-ETS1-1, K-2-ETS1-2, and K-2-ETS1-3.
- For detailed alignment of science/engineering and mathematics Storytime STEM- packs to Iowa standards, please the Storytime STEM materials description.

Professional Development:
Professional Development includes an introduction to STEM learning for young children and Storytime STEM-packs, engagement in parts of your selected Storytime STEM+C Adventure and facilitation support for math and science Storytime STEM-packs.
Duration: Half Day Training (3 hours)
Date(s): PD sessions will be offered in the summer, July - August 2023, exact dates TBD
Location: Synchronous virtual

Photos:

STEM Scale-Up Program Application Link: www.IowaSTEM.org/Scale-Up-Application