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Honors Expanded Learning Clubs

Honors Program

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Computer Science Club

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NEBRASKA HONORS PROGRAM

CLC EXPANDED LEARNING OPPORTUNITY CLUBS

INFORMATION SHEET

Name of Club: Computer Science Club

Age/Grade Level: 3rd grade – 5th grade

Number of Attendees: 6 - 8

Goal of the Club: (learning objectives/outcomes)

Introduce basic computer science concepts through games and activities.

Resources: (Information for club provided by)

<https://curriculum.code.org>

Various board games

Content Areas: (check all that apply)

- ☐ Arts (Visual, Music, Theater & Performance)
- ☐ Literacy
- ☒ STEM (Science, Technology, Engineering & Math)
- ☐ Social Studies
- ☐ Wellness (Physical Education, Health, Nutrition & Character Education)

Outputs or final products: (Does the club have a final product/project to showcase to community?)

No final product

Introducing your Club/Activities:

The aim of the Computer Science Club is to introduce the kids to the core concepts that exist in the arena of computer science and software engineering.

General Directions:

Create fun lesson plans that allow kids to play and free up energy after sitting in school. With ten to twenty minutes left, explain a concept through using an analogy of what the kids did.

Tips/Tricks:

Allowing the kids to play outside before introducing content allows them to focus more when inside.

LESSON PLAN WORKSHEET

(copy table as needed)

Lesson Activity Conditionals

Name:

Length of Activity: 50 minutes

Supplies: Twister game

Directions:

Have kids play twister for 30 – 40 minutes, then use the spinner as an example of different conditionals. If time permits, further the discussion into else and/or else if.

Conclusion of the activity:

Students learn about the conditional programming concept.

Parts of activity that worked:

Playing twister before explaining concept.

Parts of activity that did not work:

Not sitting in a classroom (students were distracted)

LESSON PLAN WORKSHEET

(copy table as needed)

Lesson Activity Loops

Name:

Length of Activity: 50 minutes

Supplies: Uno card game

Directions:

Have kids play Uno for 30 – 40 minutes. Afterwards, introduce programming of a concept of a loop through describing the termination condition as no cards ending the game. If time permits, discuss multiple types of loops (for, do-while, while).

Conclusion of the activity:

Students learn about the loop programming concept.

Parts of activity that worked:

Parts of activity that did not work:

LESSON PLAN WORKSHEET

(copy table as needed)

Lesson Activity Control flow

Name:

Length of Activity: 50 minutes

Supplies: Football, soccer ball, four-square ball (any outdoor activity)

Directions:

Let the kids play outside for 30 – 40 minutes, then introduce the concept of control flow through the different games they played. For example, in throwing a football, they had to set their feet, palm the ball, then throw it. Another example could be in four-square, to hit the ball, the player needs to wait until the ball comes to them. Essentially, show how, for certain events to happen, multiple actions need to be taken before anything happens.

Conclusion of the activity:

Students learn the concept of control flow.

Parts of activity that worked:

Students were still during discussion.

Parts of activity that did not work:

Some confusion when trying to relate concept to multiple games or activities.

LESSON PLAN WORKSHEET

(copy table as needed)

Lesson Activity General lesson format

Name:

Length of Activity: 50 minutes

Supplies: Some form of outdoor activity; have non-active activity ready each time

Directions:

Let the kids play outside for 30 – 40 minutes, then introduce the concept to learn for the day by using the activities done as analogies.

Conclusion of the activity:

Students learn a computer science concept