Algorithms & Programming: Program Development (2)   Grade: 1

Standard 1.AP.PD.02

Give attribution to ideas, solutions, and creations of others, verbally, or written, while writing or developing **algorithms** and **programs**.

Essential Skills

Give credit to an author, artist, etc. when using resources or artifacts they created to develop **algorithms** or **computer programs**

Essential Questions

How do you identify the creator of an idea, the author of a website or a book, the artist who created a picture or music, etc.?

How can you give credit when you use something created by someone else?

When is it acceptable to re-use someone else's creation or work? When is it not acceptable?

Explanation

Students should identify and orally acknowledge the creators of ideas, pictures, music, code, etc. that they use or remix while creating **algorithms** and **computer programs**. If the student's work is in writing, the student should identify their source in writing, but a formal citation is not required. Students should begin to understand that it is important for the creator to give permission to reuse or **remix** which can be as simple as saying "OK." The difference between cheating and reusing or remixing should be made clear.

Think of this as similar to….

If you create a game and your friend draws the pictures for the game, you have to share that your friend drew the pictures.

Implementation Examples—What would this look like in the classroom?

Title	Description	Link	Content Connection & Notes
Earth Science Animation	**Grade K**-- Students include pictures drawn by their classmates to create an algorithm or computer program describing weather conditions over time. The information should be based on weather data collected by the class (or previous classes). Students should identify the creators of the pictures. **Grade 1**--Students include pictures drawn by their classmates to create an algorithm or computer program describing the changes in how we see the sun, moon and/or stars over time. The information should be based on observations collected by the class (or previous classes). Students should give credit to the creators of the pictures. **Grade 2**--Students develop an animation of an Earth event (volcano, earthquake, erosion, etc.) using a block-based language and use an image from an approved website or drawn by a teammate. The students should give credit in writing to the website or peer for the contributions.		This lesson also aligns with **NGSS** K-ESS2-1 1-ESS1-1, 2-ESS1-1; In Kindergarten, use in conjunction with the lesson *Weather Predictions* that aligns with **CS** DA.CVT.01 and DA.IM.01
Then and Now	**Grade 1**--Students compare life today and in the past. Photos of various aspects of life present and past can be provided and/or students can make drawings. They sort the pictures into categories (for example: toys in the past; toys in the present; writing in school in the past; writing in school in the present). The students develop an algorithm or a computer program using the categories to compare the past and present. (For example, the algorithm could be a. select category; b. describe and show picture of past; c. describe and show picture of present; d. select new category; repeat steps b, c and d until no more categories) Students incorporate the images for each item and provide credit to the source where they found the image or to the classmate who created it.		This lesson also aligns with **SS** 1.4 History-Chronology

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These annotations are a collaboration between Maryland Center for Computing Education and the Maryland State Department of Education.