Suggested Virtual Platforms & Steps
For Remote Teaching and Learning

If you are a classroom teacher or program facilitator trying to transition from face-to-face instruction to remote online learning in this new COVID-19 world of, these resources might be helpful. Many people in today's working world do not share offices, but instead work from home and meet virtually. That is how I do most of my Global GreenSTEM work! Now you and your students have the unique opportunity to practice the virtual strategies that many might use in future school and job experiences.

Meeting Virtually as a Class or Small Group

1. Choose one or more ways for you to connect with your class, and for students to connect with each other to share ideas and documents. Base your choice on your school's suggestions and students' ability to access screens and software.
2. Practice with the virtual platforms – teacher to teacher, or with family members on different devices.
3. Set a meeting with students, email them the link to the meeting.
4. During the first meeting, demonstrate how to use the platform and let them practice so they can become active participants. For younger students, you might encourage a parent to sit with the child so the adult also learns how to use it.

Virtual platforms

- **Audio calls.** Smartphones allow students to talk one-on-one or in groups. Most phones have the capacity for multi-person calls. You can also set up an account with FreeConferenceCalls.com.
- **Video conference calls.** You can meet with students as a class or in small groups. Here are some commonly used free video conferencing platforms.
    - Google Hangouts: Hangouts requires a Gmail/Google account. Go to the Hangouts website or open Hangouts in Gmail. Then you can invite others. Screen sharing of documents and videos is a feature.
    - Skype: Each person needs to download the app and set up an account. Group Chats allow you to create smaller text conversations between class members, and could be an option for breaking students out into smaller groups.
    - Zoom: You can set up an account for your class or team, schedule meetings, and share the meeting link with the students. Screen sharing of documents and videos is a feature. Breakout Rooms on this platform allow you to meet as a class

first, break out into smaller groups as needed, and come back to the larger group when done. Zoom is also offering [additional free services](#) to schools during the pandemic.
- ○ Many video chat apps are available for smartphones and desktop.
- ○ You or your students might know about other video conferencing services.

Establishing a Routine for Online Class and Group Meetings
- ● Establish a routine for virtual chats. How often will you meet as a full class? How can a small group of students meet, depending on which platform you decide to use? Will they need an adult to set up and be present in the chats or can they use a virtual platform independently? Make sure each person knows what he or she needs to get done before the next team meeting.
- ● Determine how small groups will work together. They could divide responsibilities for different parts of the project among the group, have multiple students work individually, and share and combine their ideas on a video call or document-sharing platform, or they could have one student start work on part of the project and then pass it to another student and so on through the group.
- ● When you meet, review what has been completed and what still needs to be accomplished.

Sharing Documents, Writing Collaboratively, Giving Assignment Feedback
Your school may already have a system in place for students to share documents. If not, below are some options to consider. After choosing a platform, the next step is for you to set up folders and upload documents you want students to access.
- ● [Google Drive](#) allows you and students to upload and organize handouts, resources, and presentations into folders. You and other teachers can collaboratively and simultaneously edit them. Student groups can also work on assignments together.
- ● [Google Slides](#) functions like a version of PowerPoint that multiple users can edit. Files can be downloaded as a pdf.
- ● [Microsoft One Drive](#) offers similar collaborative document and presentation development and sharing as Google Drive.
- ● Emails. Handouts, resources, and presentations can be shared in group emails. Make sure students add numbers or dates to the document file names to identify the latest version.

Creating and Sharing Teacher and Student Video Presentations
Many students are quite skilled at creating videos on webcams and smartphones. Many free video-editing apps exist. Some apps require download to a device, others work in the cloud and support group collaboration. Here's a [collection of options](#), many of which have free versions. Provide students with guidance about which tool(s) you want them to use.

- Have students plan their video by writing a script together (using the document-sharing platform).
- Each student could individually videotape or voice record a segment for the video and upload it to the document-sharing platform. The clips can then be reviewed as a group and assembled online (in a cloud-based application) or one person could download and combine the pieces into one video on their own device.
- As a team, you could record the screen of a virtual video conference call with students talking sequentially or in unison. Most video conferencing platforms allow screen sharing so that students can talk about uploaded images, documents and presentations as part of the video presentation. Many platforms also have integrated recording features.
- Give students the flexibility to come up with other creative ways to create the video presentation!

Creating Models, Sharing Remotely
- Physical models using craft materials that can be found at home (scrap cardboard, tape, etc): One student could be designated the "model-builder" and communicate regularly with teammates to incorporate feedback.
- Free-hand drawings: Make, scan, or photograph, and email or upload onto your class' document-sharing platform. Encourage students to include labels, measurements, and color.
- Storyboards (series of drawings like a comic strip): If done as a team, each student could complete a piece of the storyboard.
- Digital drawings with 3D CAD (computer aided design) programs to build a digital model of the design concept. Many free CAD programs are available:
  - SketchUp for Secondary Education / SketchUp for Beginners (tutorial)
  - AutoDesk TinkerCAD
  - Other Free CAD software resources for beginners and kids