

Use Teams for schoolwork when bandwidth is low

Low bandwidth capacity can hamper the connection in Teams between teachers and students when you're working remotely from one another. This article suggests things you can do to minimize the bandwidth used.

The term *bandwidth* refers to the amount of data that can be transferred over an Internet connection per second.

Avoiding or minimizing the use of live video is the best way to cut down on excessive use of bandwidth. And if you have recorded video or audio to share, it's better to upload it to OneDrive or Microsoft Stream and then share a link to that file (rather than embedding the large file itself in an assignment or notebook). Read on for more details.

Ways to save bandwidth in Teams

Limit video in live class sessions

During live class sessions, turn off video cameras entirely, if possible. Alternatively, only have students turn on their cameras at the beginning of the session to greet one another, or ask them to turn off the camera except when they are speaking.

If you share a visual during a live class session, share just the document, rather than your entire desktop.

Use pre-recorded content instead live class sessions

Rather than presenting your content to students live, record a lesson as a video and store it on Microsoft Stream. Send students a link to the video to watch on their own time. The students can then watch the video streamed over the internet, rather than having to download a large video file to their computer.

This amounts to a *flipped classroom* approach. You send a Stream recording of the lesson ahead of time with background material as homework and then use class time to complete assignments. You can create channels for student groups to collaborate on assignments. Students can ask questions via chat as they work on assignments.

Stream comes with your Office 365 Education subscription, and it's available when you sign in to the [Office 365 portal](#). It's a secure video service where you can upload videos to share with your students.

If you create your lesson in PowerPoint, it's easy to record a video of the lesson and upload it to Stream. See these articles for detailed instructions:

- [Record a slide show as a video](#)
- [Save a video to Microsoft Stream](#)

Of course, you can create a video by another means, and then upload it to Stream:

Manually upload a video to Stream

1. Sign in to the [Office 365 portal](#).
2. Select the App Launcher at the top left.
3. If Stream is listed, select it. Otherwise, select **All Apps**, and then Select **Stream**.



4. On the bar across the top, select **Create**, then select **Upload Video**.
5. Click **Browse** and navigate to the video file you want to upload.

For more details, see [Upload a video](#).

Keep assignments in Teams smaller by not attaching media files

Avoid giving Assignments requiring the students to attach very large files, such as videos. If you must assign a video to students, instruct them to upload it to Stream rather than attaching it to the assignment.

Work offline in the Class Notebook

Teachers, we recommend that you plan lessons and develop assignments in OneNote while you're offline, and then go online to distribute the page. Or use Teams to distribute assignments.

Note: Operations such as Page Distribution and Review Student Work do require you to be online.

Here are some other ideas for minimizing bandwidth when working in a Class Notebook:

- Avoid large attachments in Class Notebooks that are distributed to all students. It works better to link to a large file stored in your OneDrive or Teams or Stream, rather than distributing a large attachment to all of the students.

- The **Files** tab for every team has a **Class Materials** folder that works well for sharing a read-only document with students.
- Keep each Section of the notebook relatively small, and avoid embedding attachments of large files whenever possible. As described above, instead of attaching a large file to a notebook, use the **Class Materials** folder or OneDrive and give students a link to the large file.
- Remember that audio and video files can become very large. When you leave audio feedback, try to keep it brief. With OneNote 2016, we recommend not inserting a video, which could take large amounts of bandwidth and syncing. Instead, put the video in Microsoft Stream and link to it from OneNote.

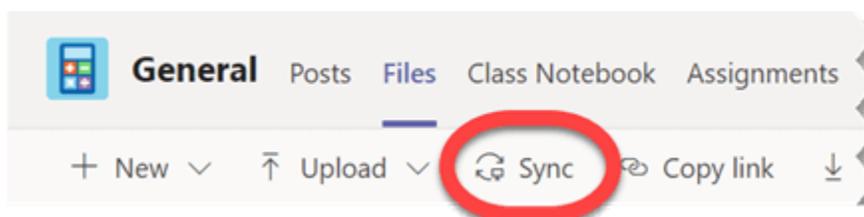
What students can do to save bandwidth

Use the video camera sparingly, or not at all

When participating in a live class meeting, entirely avoid using the video camera; just turn on the microphone. Or only turn on your video camera when it's your turn to speak.

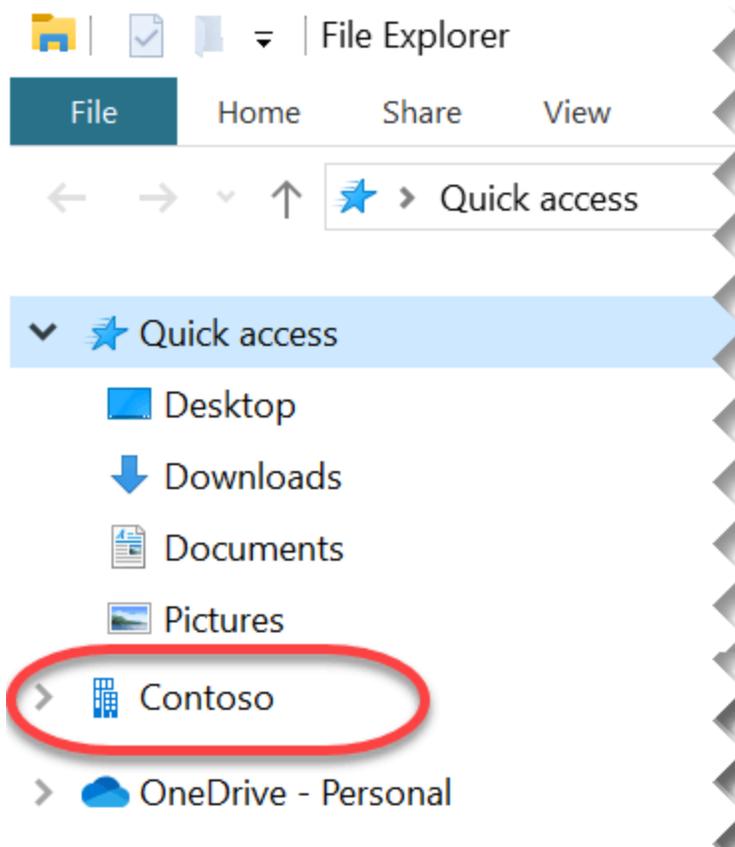
Sync files to your computer so you can read them offline

1. In Teams, select the team whose files you want to sync.
2. Select the **Files** tab at the top.
3. Select **Sync**, and follow the on-screen prompts.



By default, all files are available in the cloud, but not copied to your computer.

4. Open File Explorer. In the left pane, navigate to your school name, and then click that node to expand it. Underneath will be the folder where your the sync'd local files are stored on your computer. In the example below, **Contoso** is the school:



- 5.
6. Select the file or files you want to have available *offline* (that is, on your computer). Press and hold Ctrl while clicking if you want to select multiple files.
7. Right-click your selection and choose **Always keep on this device**.

Sync files to your mobile device so you can read them offline

When you open a file in Teams on your mobile device, you can download it to your device so that can open it again later when you're offline:

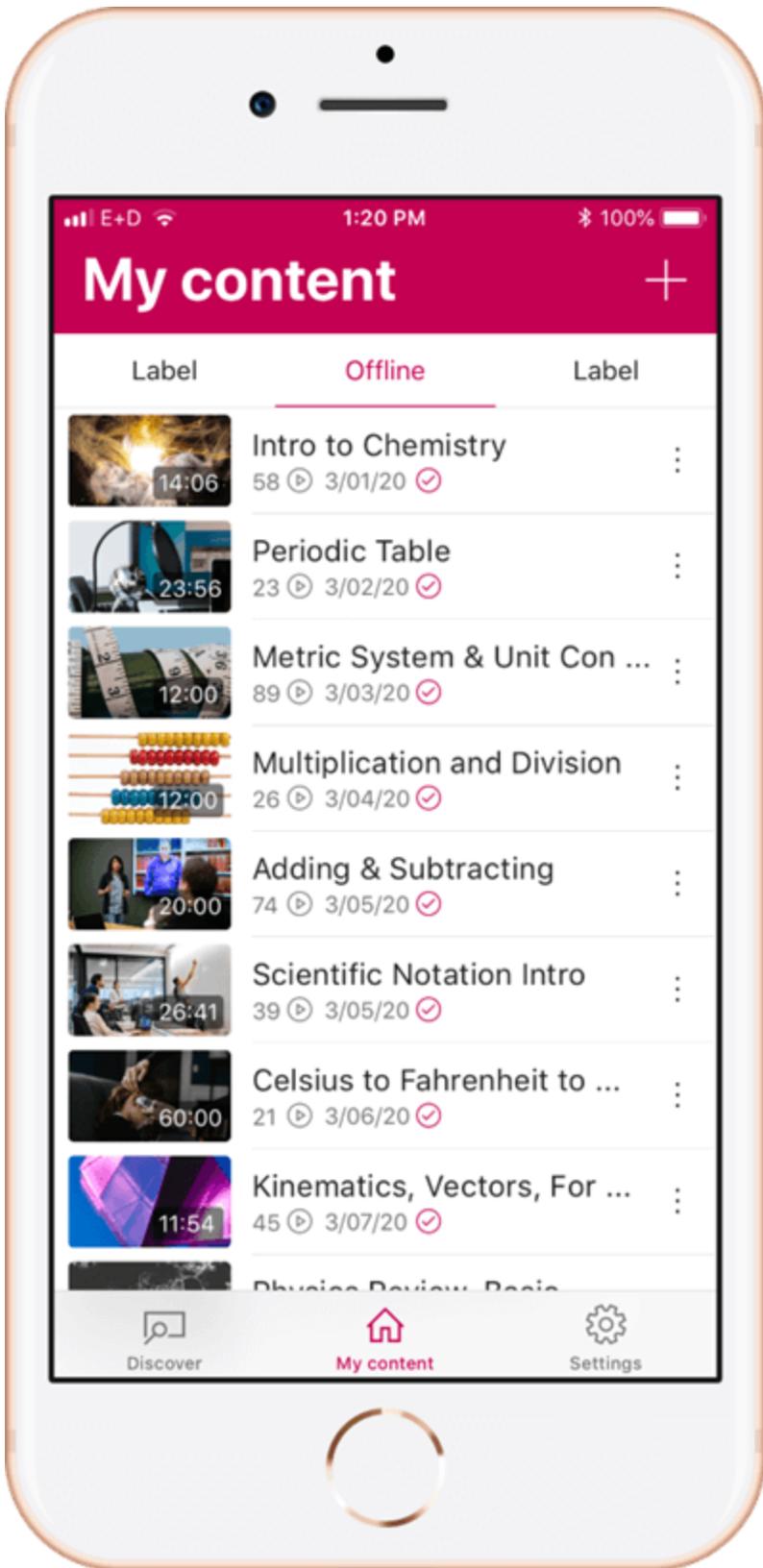
1. With the file open in Teams mobile, select the triple-dot **More options** button.
2. From the menu that appears, select **Make available offline** ↓

Sync video files to your mobile device so you can watch them offline

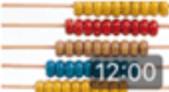
If you have limited internet connectivity, the Offline feature in the Stream mobile app can be handy for watching videos:

1. First, install the Microsoft Stream mobile app (from the App Store or Google Play) on your device.
2. Sign in with your Office 365 account.

3. Click the Stream link your teacher provided, and the video will open in the Stream app.
4. Once the video is loaded in the app, pause it and tap the download  icon below the video player.
5. After the video has downloaded, you can tap the play button immediately for normal-speed playback, or you can find the video later under **My Content > Offline**.



My content +

Label	Offline	Label
	Intro to Chemistry 58  3/01/20 	⋮
	Periodic Table 23  3/02/20 	⋮
	Metric System & Unit Con ... 89  3/03/20 	⋮
	Multiplication and Division 26  3/04/20 	⋮
	Adding & Subtracting 74  3/05/20 	⋮
	Scientific Notation Intro 39  3/05/20 	⋮
	Celsius to Fahrenheit to ... 21  3/06/20 	⋮
	Kinematics, Vectors, For ... 45  3/07/20 	⋮
	Physics Review: Basic	⋮