



AGENCY FOR  
MOBILITY AND  
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# Guidelines for school teachers "How to implement a Digital Heritage in education process by using of 360-degrees videos"



Digital  
Heritage

<http://digitalheritage360.eu>

EDU



CSEG





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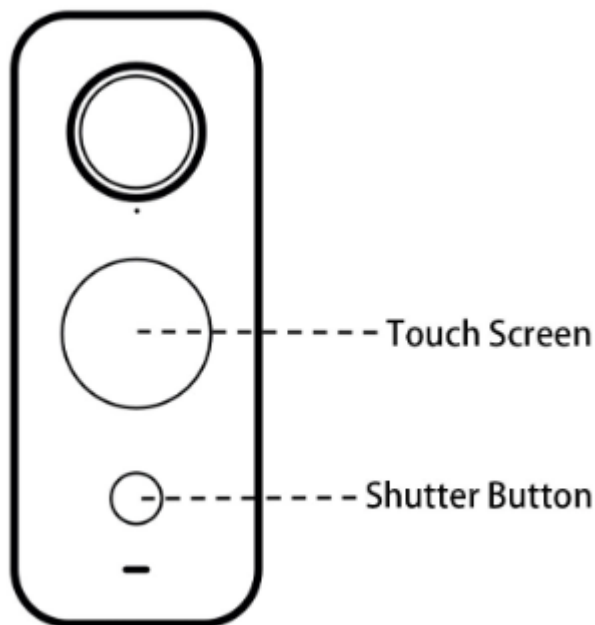
## 360 degrees media definition

**360-degree videos**, also known as **surround video/photos**, or **immersive videos/photos** or **spherical videos photos**, are video recordings where a view in every direction is recorded at the same time, shot using an omnidirectional camera or a collection of cameras. During playback on normal flat display the viewer has control of the viewing direction like a panorama. It can also be played on a display or projectors arranged in a sphere or some part of a sphere.

Omnidirectional camera we have used in Digital Heritage project is Insta360 One X2.

The Insta360 One X2 can be used to create a wide range of shots that are either difficult or impossible to achieve with a regular camera.

## Basic Operation



### Power on / off:

When the camera is turned off, press the power button to power on.

In standby mode, press the power button to light on/off the touch screen.

When the camera is on or in standby mode, long press the Power button for 2 seconds to power it off.

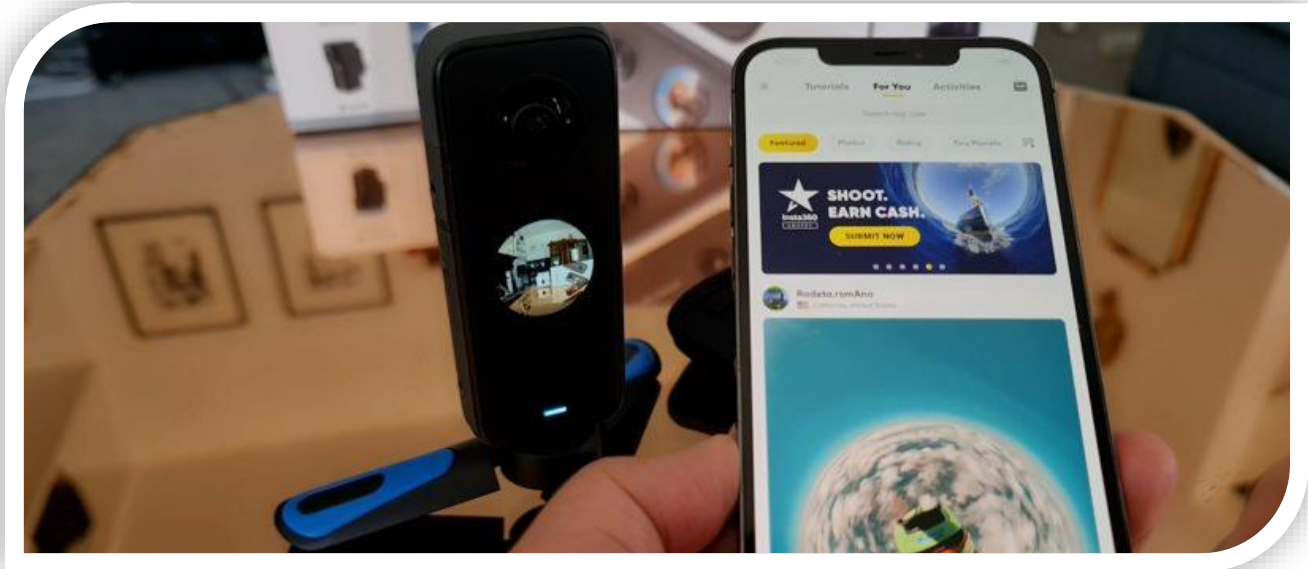
### Start Shooting:

After you've selected the mode and settings, just hit the shutter button once to start recording, and then again to stop.





## Getting started



### Be Careful of Lenses

Be aware that these lenses can get scratched quite easily. Lenses have dome covering the actual camera lens which sticks out and if you just drop the camera down on the table, eventually this dome is going to get covered in scratches.

For that reason, it's a good idea to rest the camera on a soft surface. There's a soft case which comes in the box, so you can use that. You might also want to consider getting this lens cap accessory.

### Insert memory card

On one side you have 3 catches which slide open.

The top one opens the USB C charging port, so you will probably want to get the camera charged fully before you start using it the first time. The other two open up the battery compartment.



Before we can start using the camera, we will need to install a memory card.

Now, if you haven't yet bought a micro SD card, it's worth considering the speed of the card. A cheaper card may be too slow and result in problems in terms of video quality.

Insta360 recommends that you use UHS-I Micro SD cards with a V30 or above speed class and exFAT format. So we don't advise cutting costs on the memory card. By the way, you can install a card with storage space of up to 1TB.



To install a memory card, take the battery out and slip it into the micro SD slot. There's a little graphic of a micro SD card inside which shows you which way around it goes.

It is recommend that you format your SD card when you first install it.

#### How to Format SD Card

- Swipe down on the screen
- Swipe left, tap the cog
- Scroll down the menu to SD card and tap
- Now tap format



## How it Works



To power on the camera, short-press the button on the side once.

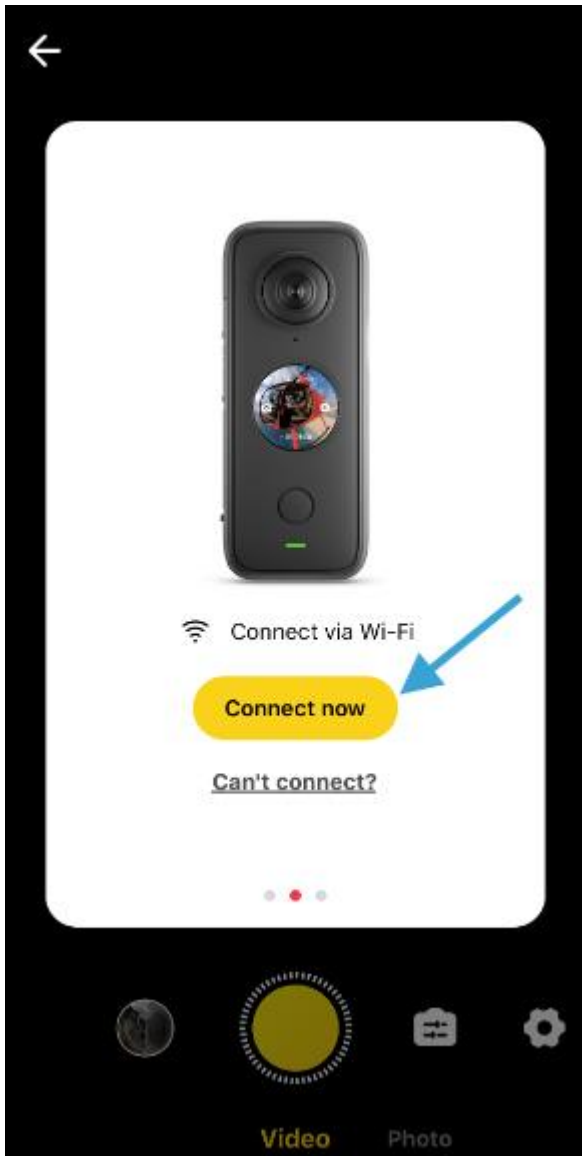
After a few seconds, the mini touchscreen shows the camera's view. Except it doesn't show the whole view because, in fact, the Insta360 One X2 is looking at everything all at once.

To power off, long-press the side button.

### Activating camera

So now is the time to activate the camera.

This is done by using mobile phone and installing Insta360 software. Android and IOS operating systems are supported.



- a) Install an app,
- b) turn on the WIFI and Bluetooth,
- c) connect to cameras WIFI
- d) start the app
- e) check the message on the camera display and approve the connection
- f) you are ready to start using the camera

<https://play.google.com/store/apps/details?id=com.arashivision.insta360akiko>

## Understanding the 360° View

The Insta360 One X2 isn't really a camera – it's actually 2 cameras. Insta360 calls these cameras the "inner" and "outer" cameras. The inner camera is on the same side as the mini touch screen, while the outer camera is on the opposite side.

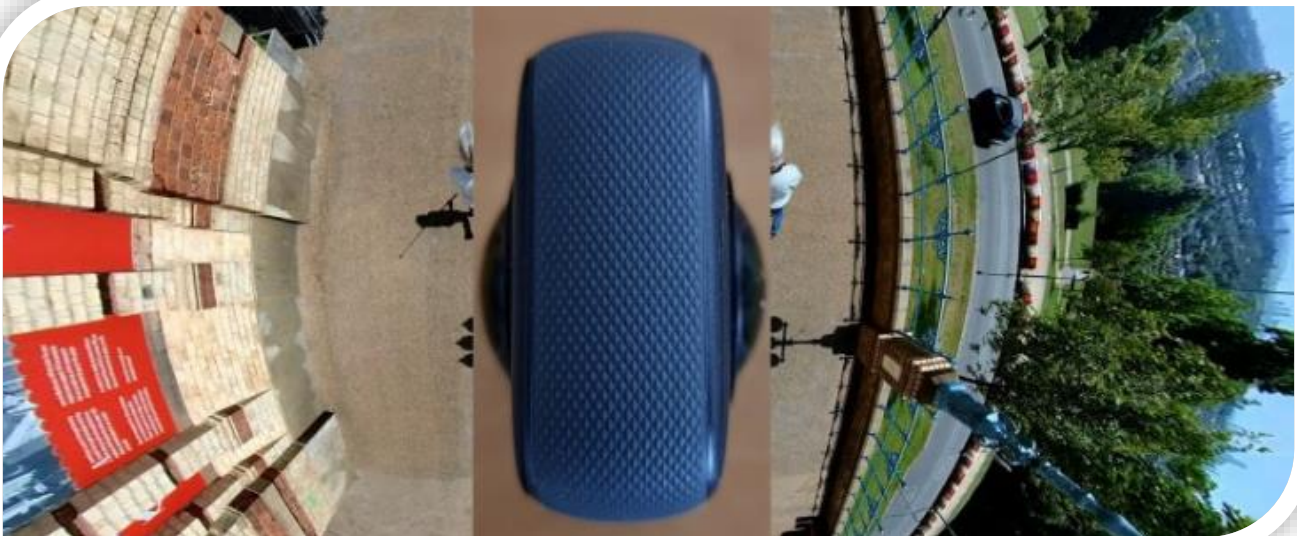
Each camera has a 180° field of view which, when combined by being stitched together, gives us the whole 360° view.

## Invisible Selfie Stick

While we can use this device holding it in our hands like we would an ordinary camera, to utilise the full power of the 360° video, we usually place it on a rod or selfie stick.

When the images from the two cameras are stitched together the selfie stick becomes invisible.





## Insta360 One X2 Operation

We can capture photos and videos using the device as a standalone camera or we can use a smartphone with the Insta360 app as a remote. Using the app we get a bigger preview, we can edit videos, and as well we can access settings, tutorials and more.

What we see in the mini screen is just a small part of the camera's 360° view. We can swipe on the screen to move that view, left or right or up or down.

If we are recording 360° video, changing this view won't make any difference to the final video. Remember, the One X2 will capture everything around it and then later we can choose the view.

## Reframing & Keyframes

We're able to change the view during the shot using keyframes, which is one of the great features of this device.

Using keyframes, we're able to give the impression that we have our own personal camera operator following us around, capturing dynamic movements. And of course the Insta360 One X2 also specialises in the well-known Tiny World effect.

## Record & Playback

To record a video just press the shutter/record button on the front. The record timer starts counting. To stop recording, press the record button again.

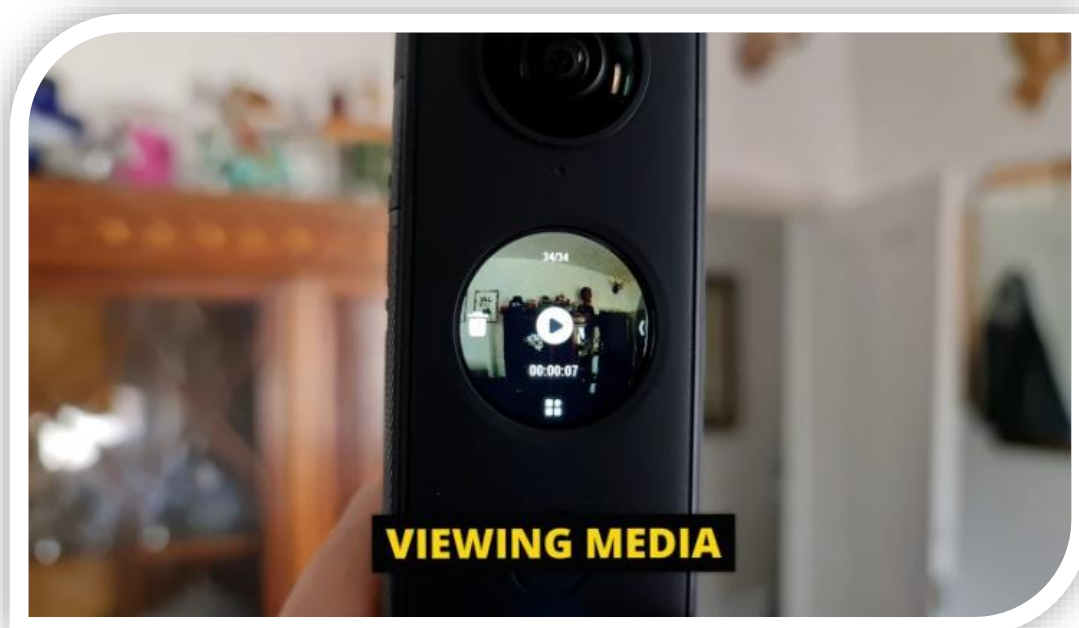
The Insta360 One X2 can also be used when it's powered off: Press the record button, the One X2 powers on and either takes a photo or records video, depending on the mode it was set to when you last powered off.



Then, after taking a photo or after you stop recording, the Insta360 One X2 powers off again, by itself. The video or photo we just captured is now saved on that micro SD card we installed earlier.

## Viewing Media

To playback a video (or view photos), just swipe right from the left of the screen to open up the gallery.





Tap the button in the middle of the screen to play the video. And if we want to see a different view, we can swipe around on the screen while it's playing.

If we want to use this video, we need to transfer it from the One X2 to some other device: a smartphone, a tablet like an iPad, a laptop or a desktop computer. Then we need to use either the Insta360 app or the Insta360 Studio software for desktop or simply connect the device directly to your computer with a cable.

## Insta360 App

Open the app and connect to the One X2 via bluetooth. Make sure both wifi and bluetooth are enabled. If this is the first time connecting the app it will ask you to activate the camera first.

Once connected, tap the album button. The app will now access the video files from the camera or from the phone if you have downloaded them. If you play a video, you're actually streaming it via bluetooth from the X2's memory.

You can see where the video files are by using this dropdown menu in the top left corner. "All" shows you videos on your phone and on the camera. Select "local" to see videos stored on your phone or "camera" for videos there.

Using the app, you can move files from the One X2 to your phone, as well as for editing clips.

When editing clips, you can either edit them while they're still on the camera or on your phone. But it's probably best to move them to your phone for a better editing experience.

## Insta360 Studio

The Insta360 Studio software is free to download for Mac or PC. To access your videos, connect the camera to your computer using the USB C port.





Open the program and it should automatically detect a connected Insta360 One X2.

You can choose to select certain files or simply import everything on the device.

This software allows you to easily reframe and zoom in and out of these 360° videos. And you can program in these movements very easily by adding keyframes.

Again, you can edit files on your computer or while they're still on the Insta360 One X2.

One major difference between editing on this and the Insta360 app is that the Studio software can export in higher quality. You can even export in ProRes. If you've watched Insta360 One X2 videos on YouTube, you might have seen some poor quality images with fuzzy, pixelated shadows. But using the Studio software, you should be able to do better.

## Recording 360° Video

If you are new to 360° cameras, you need to start thinking differently about how video is captured. Normally when we're shooting video, we think a lot about where we're going to aim our camera. But when we're shooting 360° video, we can pretty much forget about aiming and framing completely.

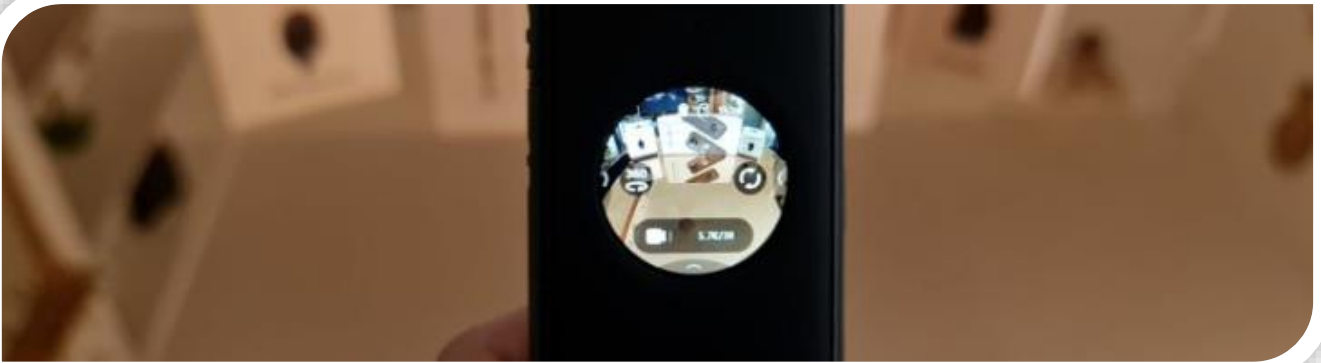
The only frame we need to think about is changing our frame of mind, because a 360° video has no frame. Instead, we need to think about where the camera is located. You can think of your 360° camera almost like a drone. Or think of it as if it's another you. Imagine if you could clone yourself and get your other self to hold the camera.

Most of the time we're going to mount the Insta360 One X2 to a selfie stick. Then we're going to extend the stick and use it to position this other us. That said, the closer a subject is to the camera, the more obvious the stitch line becomes. If you want to avoid the stitch line appearing across someone's face, for example, make sure one of the cameras is pointing at them.

## Insta360 One X2 Touch Screen

When you power on the One X2, you will see various icons and information dotted around. After a few seconds, it disappears leaving you with a clear screen. To get that information back, just tap the screen. The information you see here depends on the mode the camera is in. Right now, it's in video mode. Swiping from each side of the screen opens various settings menus, as well as the gallery.





The main touch screen page displays the following information about modes and settings:  
(Displayed settings will vary depending on the mode)



1. Battery status
2. Number of captured files or video duration that can be saved in the remaining memory space
3. Switch lens mode: 360, Steady Cam, InstaPano (only available in photo mode)
4. Switch front and rear lens
5. Shooting mode

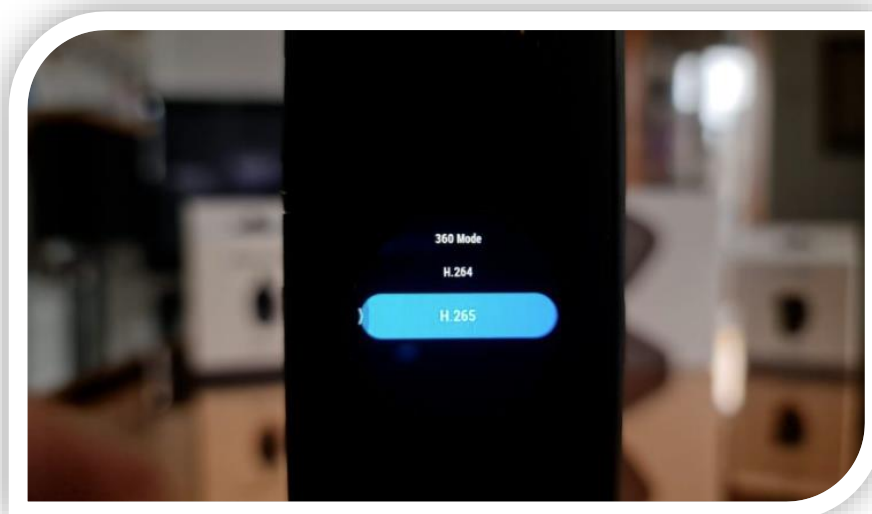


## Adjust resolution & FPS



## Insta360 One X2 Best Video Settings

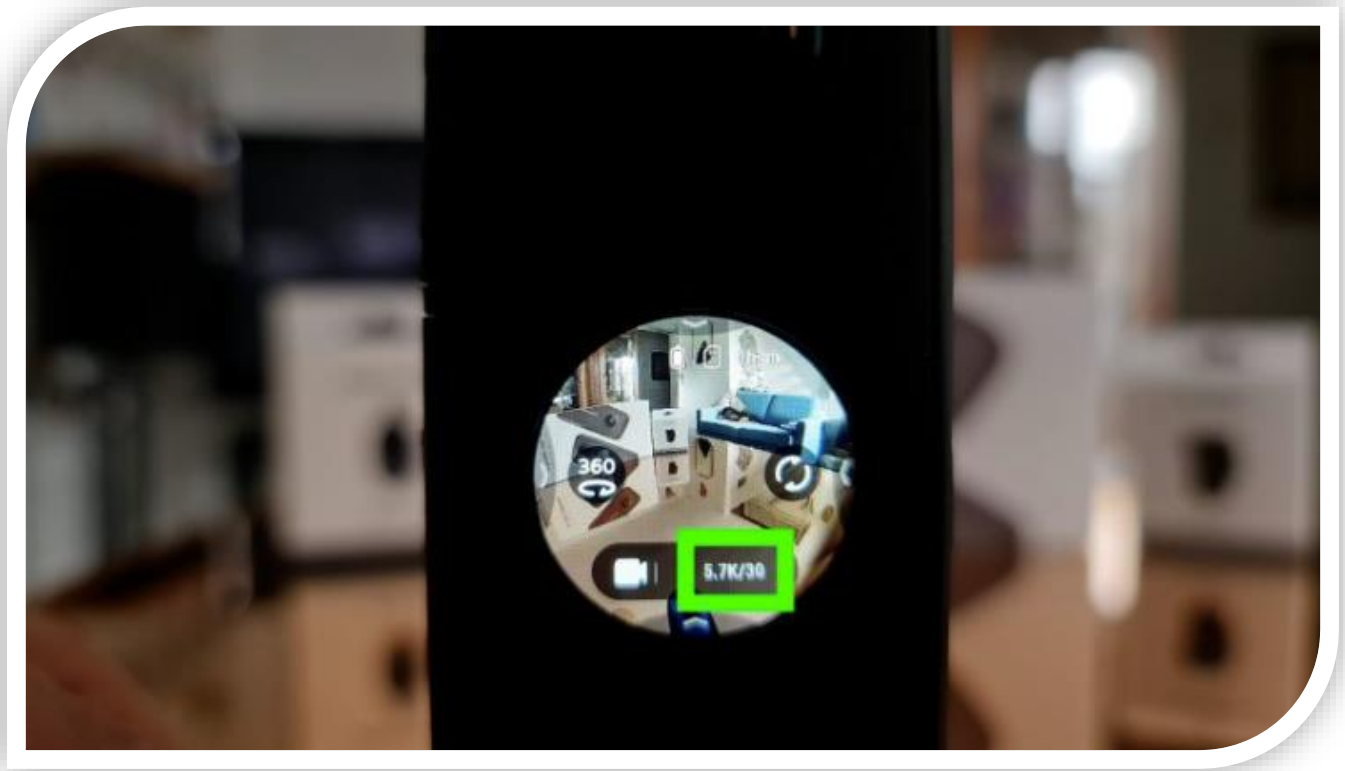
Swipe down on the screen, swipe left, tap the cog, scroll down the menu to Video Encoding and tap. Select 360 Mode and select h.265. Then do the same for Steady Cam Mode. The h.265 codec is more advanced and will create smaller files than the h.264 codec.





Back at the main screen, at the bottom, 5.7K is the resolution and frames per second is 30. You can't go any higher than that and it's really recommended to keep it at 5.7K for shooting regular video.

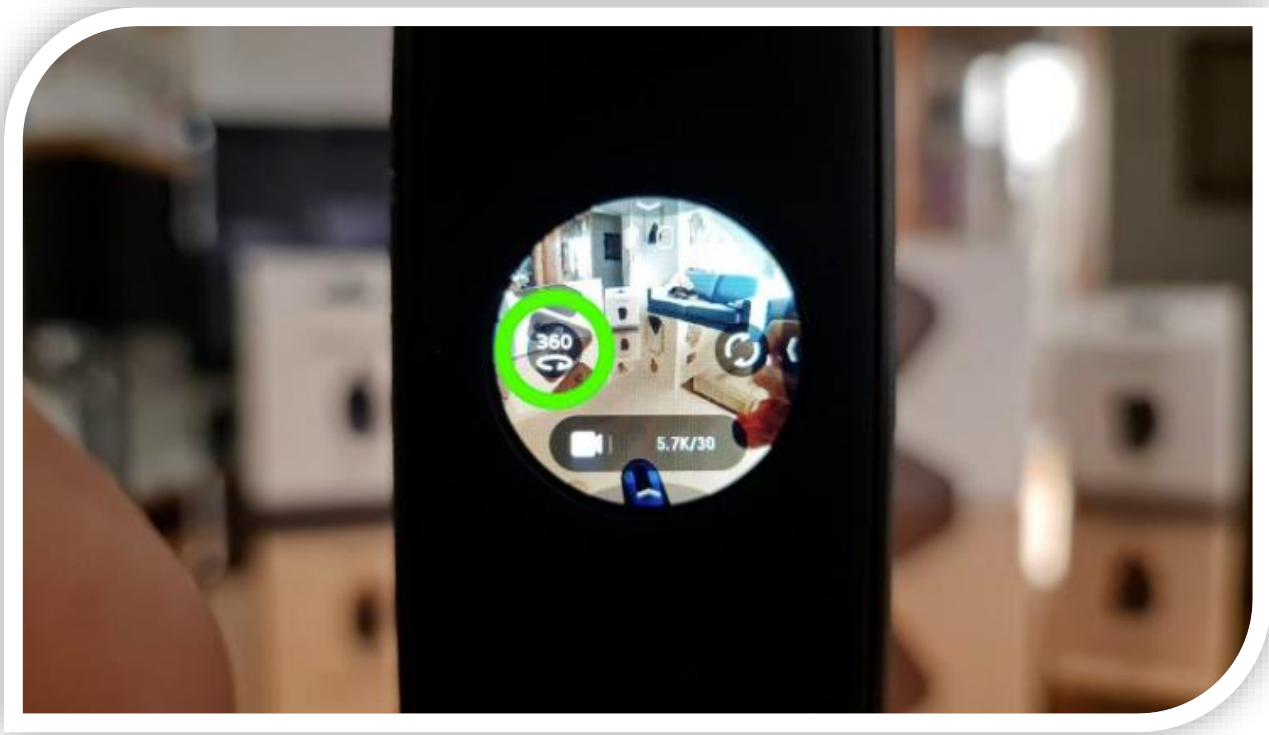
However, if we switch to 4K, this now opens up a 50fps option. And if we switch to 3K we now get a 100fps option. Shooting at higher frame rates allows us to slow the video down later to create a slow motion effect.



## Main Settings

Tap the camera icon and then swipe up and down to switch between photo and video capture. Both video and photo modes have a sub menu with various different options. Things like burst mode and timelapse, bullet time and so on.

On the main screen, tapping where it says 360 will switch between using both cameras and using one camera. Insta360 calls these the lens modes.



If it says 150 then it's only capturing images from one camera. This is called Steady Cam Mode.

If it says 360 then it shoots using both cameras and this is called 360 Mode.

Tap the circular arrow button to switch between the inner and outer cameras. Remember, if you're in 360 mode, it will always record from both cameras, regardless of which camera you select.

Like with video, a photo taken in 360 mode allows you to see the whole 360° view later, except this time it's just one still frame. You can then grab several different regular frames from that 360 image.

## 360 Mode

Here's another tip for filming in 360 mode. When we're thinking about positioning the camera, of course we can just stick it in one place and start filming.

For example, we could mount it onto a tripod and it will film everything around it. Or we can mount it to a selfie stick and hold it above ourselves as we walk along. You've probably seen this position used for filming those tiny world videos.

But you can create even more impressive shots if you move the One X2 during the shot. Using a drone, we can fly a camera all over the place. And it's a good idea to think of the One X2 like a drone, except instead of propellers lifting it into the air it has a pole.

So, as we're walking along, we can fly the One X2 around. We can fly around ourselves, down to the ground, up into the air, over objects and so on.

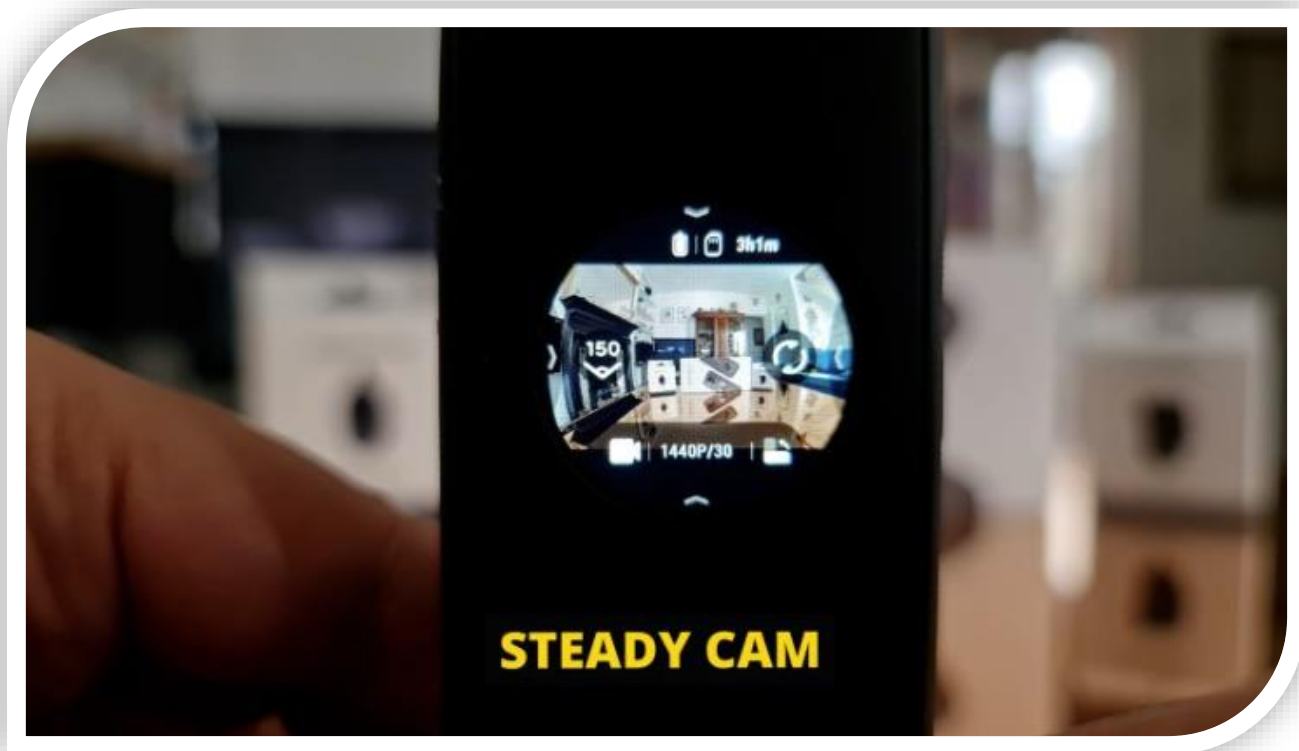
Remember the selfie stick will be removed from the final video (although you can still see the shadow of the stick). Now, when we come to edit the video, we can add further framing movement on top of the positional movement. As well, there's also powerful object tracking features.





## Steady Cam Mode

Steady Cam Mode turns the Insta360 One X2 into a more traditional action camera with a very wide angle lens. When you switch to this mode, you'll notice that you now have a maximum resolution of 1440p. You now get black bars and a button here allows you to switch between horizontal or vertical framing.



As well, when you open resolution and frame rate settings you can now choose 50fps as well as 30fps. At the top you can switch between Basic and Pro. I recommend using Pro mode for more editing options later, such as reframing and adding barrel rolls. As well, Pro mode enables FlowState stabilisation and horizon lock.

## Other Video Modes

Whichever mode the Insta360 One X2 is set to, tap the camera icon to open up and then swipe to select other options.

HDR stands for High Dynamic Range. When I tried using HDR mode for 360 video, the camera started glitching but stopped when I switched to Steady Cam mode. In fact, Insta360 recommends not to use HDR for video. As well when set to HDR you are limited to 25 or 24fps.

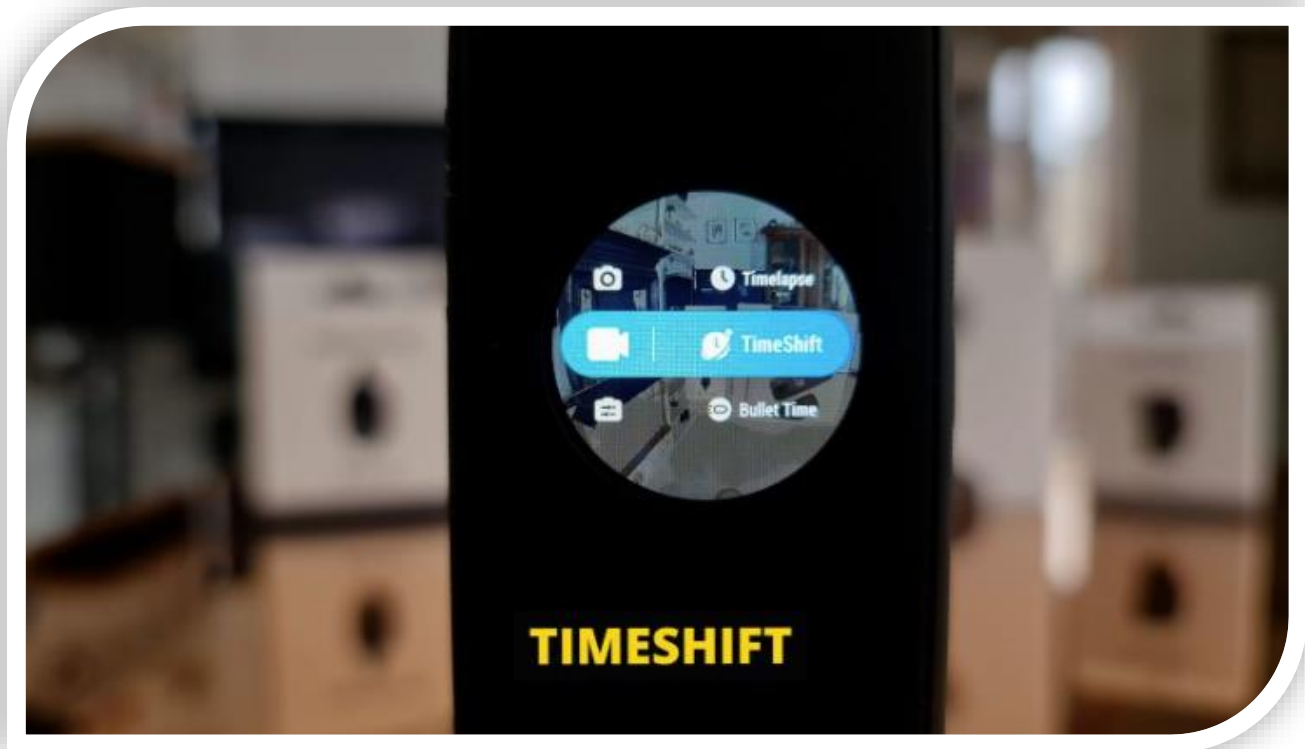
The HDR process involves taking 3 images simultaneously at different exposures and then combining them. So, if you do shoot 360 video in HDR mode, it's recommended to have the One X2 on a tripod in a fixed position. If the camera isn't moving, it's better able to cope with the HDR processing.

Timelapse shoots frames with longer intervals creating a speeded up video. To set the interval time between frames, swipe left and now scroll down to the bottom setting. Here you can set the time between frames from 0.5 seconds to 120 seconds.

TimeShift creates a video where you can switch – or shift – between timelapse and regular speed video. This



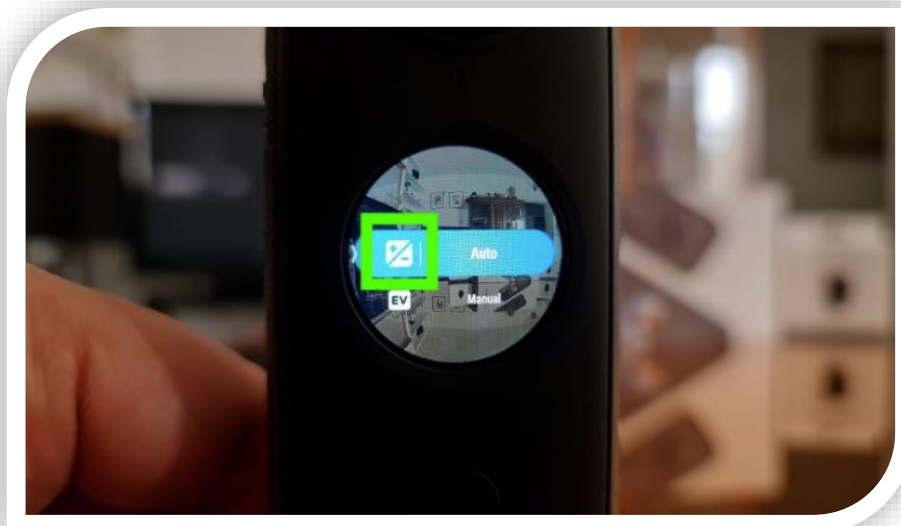
allows you to slow the video at key moments, which you can choose when editing the video.



Bullet time basically shoots video at 3K and 100fps which is then slowed down to create a slow motion effect. There's an accessory you can purchase from Insta360 called the Bullet Time Cord. Attach the One X2 to a cord and swing it around while recording 100fps video. Something to play around with and get creative.

## Advanced Video Settings

In standard video mode, if we swipe left we can access various settings.





At the top we have a box with a + and – sign which is for exposure controls. By default this is set to auto. But if we switch to manual, we get the shutter speed and ISO controls below.

If you set these manually, exposure won't change during the shot. This can look more professional, but it does make it harder to shoot video. When you move the camera around, you might find some areas are too dark or too bright.

## Manual Exposure

In this example, I wanted to capture a shot with the leaves of the tree in the foreground. But, using auto exposure, the lake in the background was overexposed.

Using manual exposure, I was able to correctly expose the background and the shot is much better.

To set manual exposure, set ISO as low as possible before setting shutter speed. If shutter speed is as slow as possible and it's still underexposed, then increase ISO.

## Exposure value

Below that is a button called EV which stands for Exposure Value. This leaves the exposure in auto but allows you to adjust up and down. So if you think the auto exposure is coming out too bright, you can set a negative value here.

## White Balance

Next we can set white balance manually. For reference, 5000k is the equivalent of clear daylight. Again, if you set this manually, it won't change during the shot which also looks more professional. On the downside, you need to make sure this is set correctly for every shot, which takes a bit more time.

## Color Profile

Finally we have the colour profile setting. There's standard, there's log for more options when colour grading and there's vivid, which gives the image a bit more vibrancy in terms of saturation and contrast, but you might find it's too much.

Most of the time, I use the standard setting and this gives me some room to play around with colours when editing.

## Isolated

Isolated Exposure is an exposure option for 360 mode.

This feature can automatically adjust the exposure of the two lenses separately when there are large light variations between the lenses

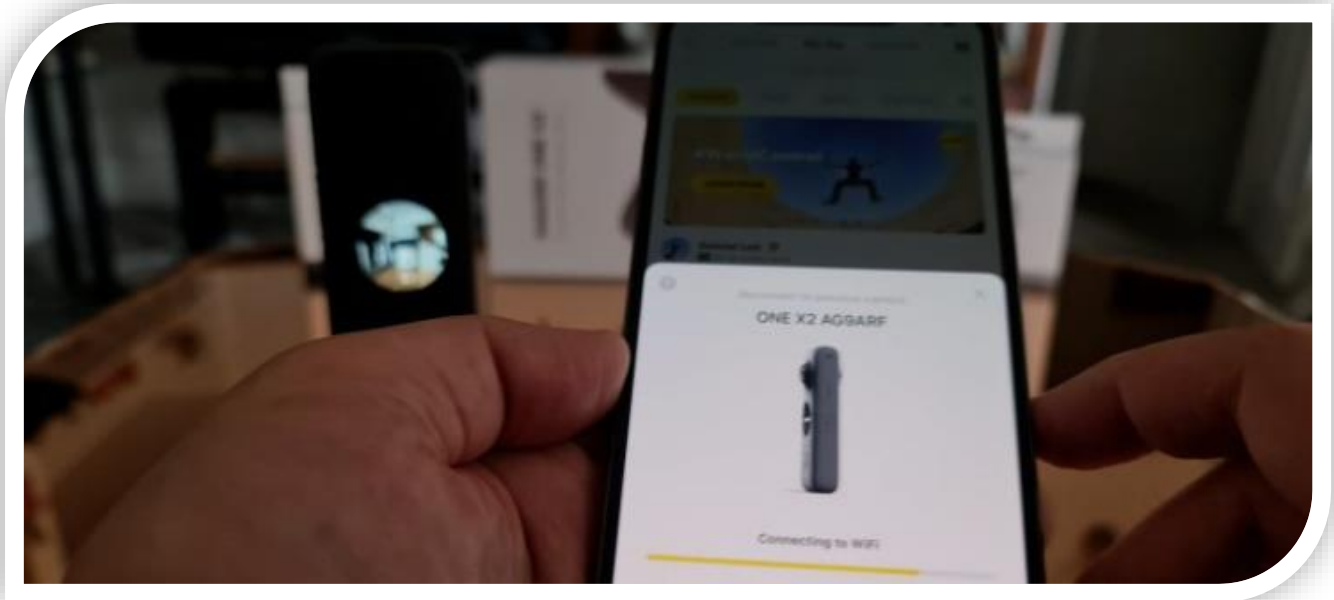
## Shutter Priority

If you select shutter priority, you can set shutter speed manually and the camera will automatically set the ISO. You might use this if you want to make sure you have a slow shutter speed. You have to be careful using this mode because if your shutter speed is too slow your video or photo might end up overexposed.



## Using Insta360 App as Remote

You can connect the One X2 to your smartphone and use the Insta360 app as a remote.



To connect your smartphone to the app you need to enable wifi, bluetooth and location services. Tap the camera icon in the middle. Now you can monitor the video coming from the camera, swipe around to see a different view, change settings and modes.

## Editing 360 Video

When editing video from a 360 camera (or even cameras like the Insta360 GO 2 which isn't a 360 camera) there are 2 ways to do it.

- **With mobile phone application (Insta360 app)**
- **Desktop computer application (Insta360 studio)**
- **Da Vinci Resolve (preferred way)**

Now is time to see what is recorded.

Even though you can edit videos inside an application you just installed on your mobile phone, we strongly suggest that you install Insta360 Studio 2021 on your computer. It is easier and more convenient to use it.

You can download studio from <https://www.insta360.com/download/insta360-onex2>

- a) Connect your camera with the laptop with the USB cable
- b) Locate storage folder and CUT all videos/photos to your laptop in specific folder called i.e. /rawrecordings
- c) Open the Insta360 Studio 2021 and import the videos from /rawrecordings folder  
Now by clicking on specific video you can trim out the scenes.





Preview all videos and trim out the scenes you will want to have in your final video.

- d) Select 360 video as the type
- e) Create folder i.e. /finalscenes and export scenes there. Name the first scene i.e. scene1.mp4 .. second one scene2.mp4 and so on.

### !!!!IMPORTANT!!!

If you are recording one event and you don't need to trim out the scenes for later composition, then you just import your footage and export it in mp4 file. No additional actions are required and you are ready to upload it on Youtube or use it offline. (skip text in next chapter under number 4)

*IN THAT CASE IN EXPORTING OPTIONS SELECT H.265 COMPRESSION.*

If you will trim out the scenes as described in d) chapter, then USE H.264 COMPRESSION while exporting scenes in mo4 videos.

## Compositing exported scenes

For additional edit and creating your video with more scenes we will use free software DaVinci Resolve.

You can download and install software from here

<https://www.blackmagicdesign.com/products/davinciresolve/>

This is robust software and it will require some time to get familiar with the way how it works.

Also a plenty of tutorials on Youtube.

- a) Insert your scenes from /finalscenes folder
- b) Drag them from first one to last one on your timeline  
Here, you can remove original audio and place your background music. Be careful about copyrights of the used materials from third parties.
- c) Once when you are satisfied with the final result, export your video to the desired folder

Since this is free tool for editing videos, there is one final steps to be done.

If you play your video at this point, you will notice that it is not displayed as 360 degrees video.

Therefore we need to use one small software which I have prepared for you and it can be downloaded from

<http://lucera.hr/radni/360-metadata-injector.zip>

Disregard security message and download the file.

- a) Extract and run 360-metadata.injector.exe file
- b) Browse for your final mp4 file you created in DaVinci
- c) Export it to the new name

Now when you will play this file, it has 360 degrees functionality and it is ready to upload it on Youtube or use it offline.



## Suggested camera settings

There are a number of ways you can adjust the settings for your shots. Explore the options below for the different modes and parameters:

1. Swipe left on the main screen to adjust the shooting parameters for your selected mode.
2. Here you can adjust things like: file type, exposure mode (ISO Priority, Shutter Priority, Manual, Auto or Isolated), exposure compensation, shutter speed, white balance, FOV and color settings.

The following table provides some suggested parameters for different activities. However, feel free to experiment and find the shooting parameters that suit you.

Activity	360 parameters	Video	Wide-Angle parameters	Video	Photo parameters
Cycling, motorcycling	4K/50		1080P/50		Interval (2s)
Traveling, natural scenery	5.7K/30		1440P/30		Standard; Burst
Skiing	5.7K/30		1080P/50		Interval
Surfing	4K/50		1080P/50		Interval (5s)
Parachuting	4K/50		1080P/30		Interval (2s)
Diving	5.7K/30		1440P/30		Interval (5s)
Nighttime City	5.7K/30		1440P/30		Night Shot; Use Pureshot
Drone	5.7K/30		1080P/50		Standard; Interval

### Tips:

1. For Bullet Time or slow motion video, 3K/100 is the standard selection.
2. For interval shooting, swipe left on the touch screen to enter the shooting parameters and scroll down to the last option. Here you can select a shooting interval of 3 seconds, 5 seconds, 10 seconds, 30 seconds, 60 seconds or 120 seconds.
3. Frames per second (FPS): Refers to the number of video frames captured per second. Higher resolutions provide better detail and sharpness, but usually only support lower frames per second values. Lower resolutions are slightly inferior in detail and sharpness, but support a higher number of frames per second, which is useful for shooting action scenes.



## Hints

At the end, let us give you some advices to create better 360 degrees videos

- a) While recording, don't rotate camera, it already records 360 degrees all over around
- b) When you are choosing the scenes to record, have on mind that it records all over around and that you should motivate viewer to look behind her/him
- c) Mix dynamic and static footages. Walk with camera, drive bike with camera, make it more interesting. You already have 2 or 3 cameras, record the same scene and mix it in DaVinci
- d) Pick interesting positions for recordings that are unusual. Select the perspectives that we as the humans don't see frequently.
- e) Don't stay too long at the same position for recording. It could be boring, unless the event you are recording is very interesting.
- f) **USE YOUR CAMERA TO CREATE INTERESTING / INNOVATIVE TEACHING MATERIALS**

Please find detailed instructions about setting up and using Insta360 One X2 camera at:

<https://onlinemanual.insta360.com/onex2/en-us/faq/>



## Annex - Preparatory notes



## PREPARATION FOR HISTORY LESSONS

<b>TEACHING TOPIC:</b> Roman architecture and communications	<b>SCHOOL:</b> Elementary School Veliki Bukovec	
<b>TEACHING UNIT:</b> Ancient Jovia (Iovia - Botivo)	<b>TEACHER:</b> Ivančica Jež	
<b>ORDINAL NUMBER:</b> 68.; 69.	<b>CLASS:</b> 5.a	
<b>TYPE OF LESSON:</b> processing	<b>DATE:</b> 13.6. 2023. /15. 6. 2023.	
<b>CONTENT FOR ACHIEVING EDUCATIONAL OUTCOMES:</b> Roman architecture and communications	<b>DOMAIN:</b> POLICY	
<b>COURSE OUTCOME:</b> <b>PRIVATE VOCATIONAL SCHOOL C.5.1.</b> The student explains the importance spread of inventions and technology in prehistory and ancient times.	<b>THEME OUTCOME:</b> Disciple -justifies the development of rural and urban houses and public houses buildings, as well as the construction of roads and the development of communications	
<b>FORMS OF WORK:</b> frontal work, individual work, group work, field teaching		
<b>TEACHING METHODS:</b> conversation, reading and working on text in printed and digital textbooks, field research, recording, working with digital materials		
<b>TEACHING MATERIALS AND AIDS:</b> textbook, workbook, presentation, image materials, computer and LCD projector/smartboard, Insta 360 one X2 camera, VR glasses		
<b>CONNECTION WITH COURSE SUBJECTS:</b> Geography, Croatian language, informatics <b>CONNECTION WITH INTERCURRICULUM TOPICS:</b>		<b>HISTORICAL CONCEPTS:</b> <b>TECHNICAL</b>





UKU, OSR, IKT, GOO, POD, ZDR		Time and space; Historical perspective; Comparison and confrontation; Causes and consequences; Continuity and change
<b>ORGANIZATION AND COURSE OF THE LESSON</b>		
<b>LESSON STRUCTURE</b>	<b>ACTIVITY proposal</b>	<b>VALUATION</b> <i>VZU - evaluation for learning</i> <i>VKU - evaluation as learning</i> <i>VN – evaluation of what has been learned</i>
<b><u>INTRODUCTORY PART</u></b>	<ul style="list-style-type: none"> <li>- the teacher calls the students in front of the historical map and they show the Roman cities in Dalmatia and Pannonia</li> <li>- the activities of the lesson are announced, in which the students will be divided into groups and research about the Roman locality in their homeland: Antička Jovija (Iovia - Botivo)</li> </ul>	
<b><u>MAIN PART</u></b>	<b>The first hour</b> <ul style="list-style-type: none"> <li>- the teacher divides the students into 2 groups, explains their task and distributes the necessary material;</li> </ul>	



	<p>-students find information about the given locality on the Internet from reliable sources - the official pages of the local museum/city <a href="https://www.youtube.com/watch?v=QlbvdaoOA0U">https://www.youtube.com/watch?v=QlbvdaoOA0U</a></p> <p>-students read the texts and use the slips to determine the key information about the site and present it to the rest of the class (geographical location, time of creation, importance during Roman rule, peculiarities, remains on the site today...)</p> <p><b>Second hour</b></p> <ul style="list-style-type: none"> <li>- field research</li> <li>- students accompanied by the teacher go to the site of the Iovie Archaeological Park (transportation provided by parents)</li> <li>- in cooperation with the employees of the Museum of the City of Ludbreg, they learn about Roman architecture: an ancient garden, a villa and a bathhouse</li> <li>- <b>with the Insta 360 one X2 camera, they record the locality</b></li> <li>- they play ancient games in the original setting: Latrunculi (Roman chess), Terni Lapilli (cross-circle), Merellus (mill).</li> <li>- back to school, digital program: Insta 360 Studio, DaVinci Resolve and Spatial Media Metadata Injector, the teacher with the help of the students, processes the recorded material</li> </ul>	<p>- students are given clear instructions for work</p> <p>- monitoring student work during activities and providing assistance to students in need (VZU)</p> <p>-students follow the presentation/ and connect new content with what they have learned (VKU)</p> <p>- the teacher will evaluate the students with a grade (VN)</p>
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<b><u>THE FINAL PART</u></b>	- the recorded material is presented using VR glasses	



### PREPARATION FOR CONDUCTING HISTORY LESSONS

<b>TEACHING TOPIC:</b> Baroque and classicism	<b>SCHOOL:</b> VELIKI BUKOVEC PRIMARY SCHOOL
<b>COURSE UNIT:</b>  18.1. Architecture in the Baroque era - example: Drašković Castle in Veliki Bukovac	<b>TEACHER:</b> Ivančica Jež
<b>ORDINAL NUMBER:</b> 64.	<b>CLASS:</b> VI. B
<b>TYPE OF LESSON:</b> processing	<b>DATE:</b> 20 May 2023.
<b>CONTENT FOR ACHIEVING EDUCATIONAL OUTCOMES:</b> Art from Baroque and Classicism – European and Croatian examples	<b>DOMAIN:</b> PHILOSOPHICAL-RELIGIOUS-CULTURAL AREA
<b>COURSE OUTCOME:</b> <b>PRIVATE VOCATIONAL SCHOOL E.6.1.</b> The student explains different ideas, artistic styles and literary works in the early and advanced modern age.	<b>THEME OUTCOME:</b> Disciple: - compares different artistic styles and cultural achievements of the new century
<b>OUTCOMES AT THE ACTIVITY LEVEL OF THE TEACHING UNIT:</b> Disciple - explains the features of baroque and classicism with special reference to architecture - lists the most important baroque and classicist artists and writers in Europe and Croatia	
<b>FORMS OF WORK:</b> frontal work, individual work, pair work, field research	
<b>TEACHING METHODS:</b> conversation, reading and working on text in printed and digital textbooks, oral presentation, writing, recording, use of digital tools	



<b>KEY TERMS:</b> baroque, classicism		
<b>TEACHING MATERIALS AND AIDS:</b> textbook, computer and LCD projector/smartboard, Insta 360 one X2 camera, VR glasses		
<b>CONNECTION WITH COURSE SUBJECTS:</b> Fine culture, Croatian language, Geography	<b>CONNECTION WITH INTERCURRICULUM TOPICS:</b> UKU, OSR, ICT, HEALTH	<b>HISTORICAL TECHNICAL CONCEPTS:</b> Causes and consequences; Time and space; Continuity and changes; Comparison and confrontation
<b>ORGANIZATION AND COURSE OF THE LESSON</b>		
<b>LESSON STRUCTURE</b>	<b>ACTIVITIES</b>	<b>VALUATION</b> <i>VZU - evaluation for learning</i> <i>VKU - evaluation as learning</i> <i>VN – evaluation of what has been learned</i>
<b><u>INTRODUCTORY PART</u></b>	<ul style="list-style-type: none"> <li>- students compare the two pictures shown; leading through the analysis with the aim of noticing the difference between baroque and classicism</li> <li>- the teacher announces a research paper: An example of Baroque architecture</li> <li>- Drašković Castle</li> </ul>	<ul style="list-style-type: none"> <li>- analysis of pictorial historical sources (VZU)</li> </ul>
<b><u>MAIN PART</u></b>	<ul style="list-style-type: none"> <li>- the teacher divides the students into 2 groups, explains the task and distributes the necessary material;</li> </ul>	<ul style="list-style-type: none"> <li>- checking the accuracy of the answers to check the understanding of the content (VZU)</li> </ul>





	<ul style="list-style-type: none"> <li>- the first group of students finds information about the Drašković family and the construction of the castle in the literature and on the Internet: Ludbreg (monograph); <a href="https://scitaroci.hr/wp-content/uploads/2018/09/5.2_2018e_veliki-bukovec_zg-mg_br.67.pdf">https://scitaroci.hr/wp-content/uploads/2018/09/5.2_2018e_veliki-bukovec_zg-mg_br.67.pdf</a></li> <li>- students make a poster</li> <li>- another group of students uses the Insta 360 one X2 camera to film the lawn and the interior of the Drašković family castle (across the street from the school).</li> </ul> <p>Example: <a href="https://www.youtube.com/watch?v=UgT2SKKwO3Y">https://www.youtube.com/watch?v=UgT2SKKwO3Y</a></p> <ul style="list-style-type: none"> <li>- back to school, digital programs: Insta 360 Studio, DaVinci Resolve and Spatial Media Metadata Injector, the teacher with the help of the students, processes the recorded material</li> </ul>	<ul style="list-style-type: none"> <li>- spotting and noting what is important in the video (VZU)</li> <li>- guided conversation and description of video content (VZU)</li> </ul>
<b><u>THE FINAL PART</u></b>	<ul style="list-style-type: none"> <li>- the first group of students presents a poster</li> <li>- another group of students presents the recorded material using VR glasses</li> </ul>	



## PREPARATION FOR HISTORY LESSONS

<b>TEACHING TOPIC:</b> Roman architecture and communications	<b>SCHOOL:</b> Elementary School Veliki Bukovec
<b>TEACHING UNIT:</b> Ancient Aqua Iase	<b>TEACHER:</b> Ivančica Jež
<b>ORDINAL NUMBER:</b> the 65th; 66.	<b>CLASS:</b> 5.b
<b>TYPE OF LESSON:</b> processing	<b>DATE:</b> 19.6. in 2023
<b>CONTENT FOR ACHIEVING EDUCATIONAL OUTCOMES:</b> Roman architecture and communications	<b>DOMAIN:</b> POLICY
<b>COURSE OUTCOME:</b> <b>PRIVATE VOCATIONAL SCHOOL C.5.1.</b> The student explains the importance spread of inventions and technology in prehistory and ancient times.	<b>THEME OUTCOME:</b> Disciple -justifies the development of rural and urban houses and public houses buildings, as well as the construction of roads and the development of communications
<b>FORMS OF WORK:</b> frontal work, individual work, group work, field teaching	
<b>TEACHING METHODS:</b> conversation, reading and working on text in printed and digital textbooks, field research, recording, working with digital materials	
<b>TEACHING MATERIALS AND AIDS:</b> textbook, workbook, presentation, image materials, computer and LCD projector/smartboard, Insta 360 one X2 camera, VR glasses	
<b>CONNECTION WITH COURSE SUBJECTS:</b> Geography, Croatian language, informatics	<b>HISTORICAL CONCEPTS:</b> <b>TECHNICAL</b>



<b>CONNECTION WITH INTERCURRICULUM TOPICS:</b> UKU, OSR, IKT, GOO, POD, ZDR		Time and space; Historical perspective; Comparison and confrontation; Causes and consequences; Continuity and change
<b>ORGANIZATION AND COURSE OF THE LESSON</b>		
<b>LESSON STRUCTURE</b>	<b>ACTIVITY proposal</b>	<b>VALUATION</b> <i>VZU - evaluation for learning</i> <i>VKU - evaluation as learning</i> <i>VN – evaluation of what has been learned</i>
<b><u>INTRODUCTORY PART</u></b>	- the activities of the lesson are announced, in which students will be divided into groups and research about the Roman site in their homeland: Antička Aqua Iase	
<b><u>MAIN PART</u></b>	<b>The first hour</b> - the teacher divides the students into 2 groups, explains their task and distributes the necessary material; -students find information about the given locality on the Internet from reliable sources - the official pages of the local museum/city  -students read the texts and use the slips to determine the key information about the site and present it to the rest of the class (geographical location,	- students are given clear instructions for work



	<p>time of creation, importance during Roman rule, peculiarities, remains on the site today...)</p> <p><b>Second hour</b></p> <ul style="list-style-type: none"> <li>- field research</li> <li>- <b>with the Insta 360 one X2 camera, they record the locality</b> Example: <a href="https://www.youtube.com/watch?v=HRfXUGbquts">https://www.youtube.com/watch?v=HRfXUGbquts</a></li> <li>- back to school, digital program: Insta 360 Studio, DaVinci Resolve and Spatial Media Metadata Injector, the teacher with the help of the students, processes the recorded material</li> </ul>	<ul style="list-style-type: none"> <li>- monitoring student work during activities and providing assistance to students in need (VZU)</li> <li>- students follow the presentation/ and connect new content with what they have learned (VKU)</li> <li>- the teacher will evaluate the students with a grade (VN)</li> </ul>
<b><u>THE FINAL PART</u></b>	<ul style="list-style-type: none"> <li>- the recorded material is presented using VR glasses</li> </ul>	



### PREPARATION FOR CONDUCTING A MUSIC CULTURE LESSON

<b>TEACHING TOPIC:</b> Performance of traditional music	<b>SCHOOL:</b> Elementary School Veliki Bukovec
<b>TEACHING UNIT:</b> "Oy Molvarsko, flat field!"	<b>TEACHER:</b> Igor Jakupec
<b>ORDINAL NUMBER:</b> 3.	<b>CLASS:</b> 5.a
<b>TYPE OF LESSON:</b> processing	<b>DATE:</b> 22.9. in 2022
<b>CONTENT FOR ACHIEVING EDUCATIONAL OUTCOMES:</b>  Song cover	<b>DOMAIN:</b>  Traditional music
<b>COURSE OUTCOME:</b>  Elementary School GK B.5.3. performs musical games while singing, listening to music;  Elementary School GK B.5.4. participates in music creation activities. He plays dobs, shorter rhythmic patterns and accompaniment, and shorter instrumental compositions.  Elementary School GK C.5.1. recognizes different roles and types of music based on listening to music and active musicianship;	<b>THEME OUTCOME:</b>  Disciple  - gets to know the characteristics of Croatian traditional music in their own environment (local community) based on listening, singing and dancing/movement.
<b>FORMS OF WORK:</b>	





frontal work, individual work, group work

**TEACHING METHODS:**

conversation, reading and working on text in printed and digital textbooks, listening, recording, working with digital materials

**TEACHING MATERIALS AND AIDS:**

textbook, workbook, presentation, image materials, computer and LCD projector/smartboard, Insta 360 one X2 camera, VR glasses

**CONNECTION WITH COURSE SUBJECTS:**

Geography, Croatian language, informatics

**CONNECTION WITH INTERCURRICULUM TOPICS:**

UKU, OSR, IKT, GOO, POD, ZDR

**ORGANIZATION AND COURSE OF THE LESSON**

LESSON STRUCTURE	ACTIVITY proposal	<b>VALUATION</b>  <i>VZU - evaluation for learning</i>  <i>VKU - evaluation as learning</i>
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		<i>VN – evaluation of what has been learned</i>
<b><u>INTRODUCTORY PART</u></b>	-students discuss the geographical characteristics of Podravina, customs, traditional songs they have heard so far	
<b><u>MAIN PART</u></b>	<ul style="list-style-type: none"> <li>- students listen to the composition "Oh Molvarsko, flat field!"</li> <li>- they briefly repeat about the measure</li> <li>- everyone reads and learns the lyrics of the song together</li> <li>- students learn the song by ear in phrases of 4 bars</li> <li>- pay attention to beautiful and expressive singing with understanding of the text and correct intonation</li> <li>- analyze a small musical sentence</li> <li>-discuss the instruments they hear</li> </ul> <p>Task for the students: in collaboration with members of the local cultural and artistic society, use the Insta 360 One X2 camera to record the choreography to the given song</p> <p>Example:<a href="https://www.youtube.com/watch?v=tYLj0peEYhw">https://www.youtube.com/watch?v=tYLj0peEYhw</a></p>	<ul style="list-style-type: none"> <li>- students are given clear instructions for work</li> <li>- monitoring student work during activities and providing assistance to students in need (VZU)</li> <li>-students follow the presentation/ and connect new content with what they have learned (VKU)</li> <li>- the teacher will evaluate the students with a grade (VN)</li> </ul>



	- back to school, with digital programs: Insta 360 Studio, DaVinci Resolve and Spatial Media Metadata Injector, the teacher, with the help of students, processes the recorded material	
<b><u>THE FINAL PART</u></b>	- recorded material presented at the folklore fair	



## PREPARATION FOR CONDUCTING ART CULTURE LESSONS

<b>TEACHING TOPIC:</b> Opera	<b>SCHOOL:</b> Elementary School Veliki Bukovec
<b>COURSE UNIT:</b> "Love and malice"	<b>TEACHER:</b> Igor Jakupec
<b>ORDINAL NUMBER:</b> 9.	<b>CLASS:</b> 8.b
<b>TYPE OF LESSON:</b> processing	<b>DATE:</b> 15.11. in 2022
<b>CONTENT FOR ACHIEVING EDUCATIONAL OUTCOMES:</b>  Listening to a song	<b>DOMAIN:</b>  Dramatic work of art
<b>COURSE OUTCOME:</b>  Elementary School GK A.8.2. The student aurally recognizes the characteristics of music from different musical-stylistic periods.  Elementary School GK A.8.3. The student aurally and visually recognizes, distinguishes, describes and compares musical-stage and vocal-instrumental types	<b>THEME OUTCOME:</b>  Disciple  - gets acquainted with the first Croatian opera
<b>FORMS OF WORK:</b>  frontal work, individual work, group work	
<b>TEACHING METHODS:</b>	



conversation, reading and working on text in printed and digital textbooks, listening, recording, working with digital materials

**TEACHING MATERIALS AND AIDS:**

textbook, workbook, presentation, image materials, computer and LCD projector/smartboard, Insta 360 one X2 camera, VR glasses

**CONNECTION WITH COURSE SUBJECTS:**

History, Croatian language, informatics

**CONNECTION WITH INTERCURRICULUM TOPICS:**

UKU, OSR, IKT, GOO, POD, ZDR

**ORGANIZATION AND COURSE OF THE LESSON**

LESSON STRUCTURE	ACTIVITY proposal	<b>VALUATION</b>  <i>VZU - evaluation for learning</i>  <i>VKU - evaluation as learning</i>  <i>VN – evaluation of what has been learned</i>



<b><u>INTRODUCTORY PART</u></b>	-students discuss the Illyrian movement and its goals	
<b><u>MAIN PART</u></b>	<ul style="list-style-type: none"> <li>- students listen to part of the opera "Ljubav i zloba."</li> <li>- they meet the composer of this opera</li> <li>- they read the content of the opera</li> <li>- they get to know the characters from the opera</li> <li>- answer the questions from the book</li> </ul> <p>Task for students: in collaboration with the theater, record one part of the opera with the Insta 360 One X2 camera</p> <p>Example: <a href="https://www.youtube.com/watch?v=aXIUJGCYxko">https://www.youtube.com/watch?v=aXIUJGCYxko</a></p> <ul style="list-style-type: none"> <li>- back to school, with digital programs: Insta 360 Studio, DaVinci Resolve and Spatial Media Metadata Injector, the teacher, with the help of students, processes the recorded material</li> </ul>	<ul style="list-style-type: none"> <li>- students are given clear instructions for work</li> <li>- monitoring student work during activities and providing assistance to students in need (VZU)</li> <li>-students follow the presentation/ and connect new content with what they have learned (VKU)</li> <li>- the teacher will evaluate the students with a grade (VN)</li> </ul>
<b><u>THE FINAL PART</u></b>	- to present the recorded material on the occasion of Theater Day	





### PREPARATION FOR CONDUCTING A MUSIC CULTURE LESSON

<b>TEACHING TOPIC:</b> Performance of traditional music	<b>SCHOOL:</b> Elementary School Veliki Bukovec
<b>TEACHING UNIT:</b> "Love is not for sale!"	<b>TEACHER:</b> Igor Jakupec
<b>ORDINAL NUMBER:</b> 3.	<b>CLASS:</b> 5.b
<b>TYPE OF LESSON:</b> processing	<b>DATE:</b> 17.10. in 2022
<b>CONTENT FOR ACHIEVING EDUCATIONAL OUTCOMES:</b>  Song cover	<b>DOMAIN:</b>  Traditional music
<b>COURSE OUTCOME:</b>  Elementary School GK B.5.3. performs musical games while singing, listening to music;  Elementary School GK B.5.4. participates in music creation activities. He plays dobs, shorter rhythmic patterns and accompaniment, and shorter instrumental compositions.  Elementary School GK C.5.1. recognizes different roles and types of music based on listening to music and active musicianship;	<b>THEME OUTCOME:</b>  Disciple  - gets to know the characteristics of Croatian traditional music in their own environment (local community) based on listening, singing and dancing/movement.
<b>FORMS OF WORK:</b>	



frontal work, individual work, group work		
<b>TEACHING METHODS:</b>  conversation, reading and working on text in printed and digital textbooks, listening, recording, working with digital materials		
<b>TEACHING MATERIALS AND AIDS:</b>  textbook, workbook, presentation, image materials, computer and LCD projector/smartboard, Insta 360 one X2 camera, VR glasses		
<b>CONNECTION WITH COURSE SUBJECTS:</b>  Geography, Croatian language, informatics  <b>CONNECTION WITH INTERCURRICULUM TOPICS:</b>  UKU, OSR, IKT, GOO, POD, ZDR		
<b>ORGANIZATION AND COURSE OF THE LESSON</b>		
<b>LESSON STRUCTURE</b>	<b>ACTIVITY proposal</b>	<b>VALUATION</b>  <i>VZU - evaluation for learning</i>  <i>VKU - evaluation as learning</i>



		<i>VN – evaluation of what has been learned</i>
<b><u>INTRODUCTORY PART</u></b>	-students discuss the geographical characteristics of Podravina, customs, traditional songs they have heard so far	
<b><u>MAIN PART</u></b>	<ul style="list-style-type: none"> <li>- students listen to the composition "Ljubav se trži!"</li> <li>- everyone reads and learns the lyrics of the song together</li> <li>- students learn the song by ear in phrases of 4 bars</li> <li>- pay attention to beautiful and expressive singing with understanding of the text and correct intonation</li> <li>- analyze a small musical sentence</li> <li>-discuss the instruments they hear</li> </ul> <p>Task for students: in collaboration with members of the local cultural and artistic society, record traditional games with the Insta 360 One X2 camera</p> <p><b>Example:</b> <a href="https://www.youtube.com/watch?v=vjfYiSNqBXw">https://www.youtube.com/watch?v=vjfYiSNqBXw</a></p> <ul style="list-style-type: none"> <li>- back to school, with digital programs: Insta 360 Studio, DaVinci Resolve and Spatial Media Metadata Injector, the teacher, with the help of students, processes the recorded material</li> </ul>	<ul style="list-style-type: none"> <li>- students are given clear instructions for work</li> <li>- monitoring student work during activities and providing assistance to students in need (VZU)</li> <li>-students follow the presentation/ and connect new content with what they have learned (VKU)</li> <li>- the teacher will evaluate the students with a grade (VN)</li> </ul>



<b><u>THE FINAL PART</u></b>	- recorded material presented at the Folklore Show	
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## PREPARATION FOR CONDUCTING ART CULTURE LESSONS

<b>TEACHING TOPIC:</b> Art and community	<b>SCHOOL:</b> Elementary School Veliki Bukovec
<b>TEACHING UNIT:</b> Dimensions of colors	<b>TEACHER:</b> Davor Cvetnić
<b>ORDINAL NUMBER:</b> 34.	<b>CLASS:</b> 8.b
<b>TYPE OF LESSON:</b> processing	<b>DATE:</b> 6.4. in 2023
<b>CONTENT FOR ACHIEVING EDUCATIONAL OUTCOMES:</b>  Color	<b>DOMAIN:</b>  Modern painting
<b>COURSE OUTCOME:</b>  Primary school LK A.8.3. In his own expression, the student uses the technical and expressive possibilities of new media technologies  Primary school LK B.8.2. The student interprets fine and visual artistic works by connecting personal experience, artistic language and thematic content of the work as a whole  Primary school LK C.8.2. The student discusses the social context of artistic work	<b>THEME OUTCOME:</b>  Disciple  - gets to know the characteristics of modern art
<b>FORMS OF WORK:</b>	



frontal work, individual work		
<b>TEACHING METHODS:</b>  conversation, reading and working on text in printed and digital textbooks, listening, recording, working with digital materials		
<b>TEACHING MATERIALS AND AIDS:</b>  Tempera, textbook, workbook, presentation, image materials, computer and LCD projector/smartboard, Insta 360 one X2 camera, VR glasses		
<b>CONNECTION WITH COURSE SUBJECTS:</b>  informatics  <b>CONNECTION WITH INTERCURRICULUM TOPICS:</b>  UKU, OSR, IKT, GOO, POD, ZDR		
<b>ORGANIZATION AND COURSE OF THE LESSON</b>		
<b>LESSON STRUCTURE</b>	<b>ACTIVITY proposal</b>	<b>VALUATION</b>  <i>VZU - evaluation for learning</i>  <i>VKU - evaluation as learning</i>





		<i>VN – evaluation of what has been learned</i>
<b><u>INTRODUCTORY PART</u></b>	<ul style="list-style-type: none"> <li>-students discuss everything they have learned so far about colors</li> <li>- they repeat how to paint with tempera</li> </ul>	
<b><u>MAIN PART</u></b>	<p>Students experiment with different techniques of applying paint to paper.</p> <p>They are watching a short film about action painting</p> <p>They discuss how modern works of art are created</p> <p>Students visit local studios.</p> <p>They are talking to the artist</p> <p>Task for students: use the Insta 360 One X2 camera to record the artist while working</p> <p><b>Example:</b> <a href="https://www.youtube.com/watch?v=ex5BS_XNYqs">https://www.youtube.com/watch?v=ex5BS_XNYqs</a></p> <ul style="list-style-type: none"> <li>- back to school, with digital programs: Insta 360 Studio, DaVinci Resolve and Spatial Media Metadata Injector, the teacher, with the help of students, processes the recorded material</li> </ul>	<ul style="list-style-type: none"> <li>- students are given clear instructions for work</li> <li>- monitoring student work during activities and providing assistance to students in need (VZU)</li> <li>-students follow the presentation/ and connect new content with what they have learned (VKU)</li> <li>- the teacher will evaluate the students with a grade (VN)</li> </ul>



<b><u>THE FINAL PART</u></b>	- recorded material presented at the artist's exhibition	
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## PREPARATION FOR CONDUCTING ART CULTURE LESSONS

<b>TEACHING TOPIC:</b> Art and community	<b>SCHOOL:</b> Elementary School Veliki Bukovec
<b>COURSE UNIT:</b> Format	<b>TEACHER:</b> Davor Cvetnić
<b>ORDINAL NUMBER:</b> 14.	<b>CLASS:</b> 8.b
<b>TYPE OF LESSON:</b> processing	<b>DATE:</b> 6.10. in 2022
<b>CONTENT FOR ACHIEVING EDUCATIONAL OUTCOMES:</b>  Comic	<b>DOMAIN:</b>  Modern painting
<b>COURSE OUTCOME:</b>  Primary school LK A.8.3. In his own expression, the student uses the technical and expressive possibilities of new media technologies  Primary school LK B.8.2. The student interprets fine and visual artistic works by connecting personal experience, artistic language and thematic content of the work as a whole  Primary school LK C.8.2. The student discusses the social context of artistic work	<b>THEME OUTCOME:</b>  Disciple  - learns the characteristics of comics
<b>FORMS OF WORK:</b>	



frontal work, individual work		
<b>TEACHING METHODS:</b> conversation, reading and working on text in printed and digital textbooks, listening, recording, working with digital materials		
<b>TEACHING MATERIALS AND AIDS:</b> felt-tip pens, textbook, workbook, presentation, image materials, computer and LCD projector/smartboard, Insta 360 one X2 camera, VR glasses		
<b>CONNECTION WITH COURSE SUBJECTS:</b> informatics  <b>CONNECTION WITH INTERCURRICULUM TOPICS:</b> UKU, OSR, IKT, GOO, POD, ZDR		
<b>ORGANIZATION AND COURSE OF THE LESSON</b>		
<b>LESSON STRUCTURE</b>	<b>ACTIVITY proposal</b>	<b>VALUATION</b> <i>VZU - evaluation for learning</i>  <i>VKU - evaluation as learning</i>



		<i>VN – evaluation of what has been learned</i>
<b><u>INTRODUCTORY PART</u></b>	<ul style="list-style-type: none"> <li>-students discuss everything they have learned so far about personnel, plans.</li> <li>- they look at the comics they brought to school</li> </ul>	
<b><u>MAIN PART</u></b>	<p>They are watching a clip from the movie Spiderman</p> <p>They learn how movie heroes were created from comic books</p> <p>Students visit a local comic artist</p> <p>They are talking to the artist</p> <p>Task for students: use the Insta 360 One X2 camera to record the artist while working</p> <p>Example: <a href="https://www.youtube.com/watch?v=wSqAAyS1Ow0">https://www.youtube.com/watch?v=wSqAAyS1Ow0</a></p> <p>- back to school, with digital programs: Insta 360 Studio, DaVinci Resolve and Spatial Media Metadata Injector, the teacher, with the help of students, processes the recorded material</p>	<ul style="list-style-type: none"> <li>- students are given clear instructions for work</li> <li>- monitoring student work during activities and providing assistance to students in need (VZU)</li> <li>-students follow the presentation/ and connect new content with what they have learned (VKU)</li> </ul>



		- the teacher will evaluate the students with a grade (VN)
<b><u>THE FINAL PART</u></b>	- recorded material presented at the artist's exhibition	



## PREPARATION FOR CONDUCTING ART CULTURE LESSONS

<b>TEACHING TOPIC:</b> Art and community	<b>SCHOOL:</b> Elementary School Veliki Bukovec
<b>TEACHING UNIT:</b> Museum	<b>TEACHER:</b> Davor Cvetnić
<b>ORDINAL NUMBER:</b> 35.	<b>CLASS:</b> 8.a
<b>TYPE OF LESSON:</b> processing	<b>DATE:</b> 13.6. in 2023
<b>CONTENT FOR ACHIEVING EDUCATIONAL OUTCOMES:</b>  Museum	<b>DOMAIN:</b>  Modern painting
<b>COURSE OUTCOME:</b>  Primary school LK A.8.3. In his own expression, the student uses the technical and expressive possibilities of new media technologies  Primary school LK B.8.2. The student interprets fine and visual artistic works by connecting personal experience, artistic language and thematic content of the work as a whole  Primary school LK C.8.2. The student discusses the social context of artistic work	<b>THEME OUTCOME:</b>  Disciple  - visit to the museum
<b>FORMS OF WORK:</b>	






frontal work, individual work		
<b>TEACHING METHODS:</b> conversation, reading and working on text in printed and digital textbooks, listening, recording, working with digital materials		
<b>TEACHING MATERIALS AND AIDS:</b> picture materials, computer and LCD projector/smartboard, Insta 360 one X2 camera, VR glasses		
<b>CONNECTION WITH COURSE SUBJECTS:</b> informatics  <b>CONNECTION WITH INTERCURRICULUM TOPICS:</b> UKU, OSR, IKT, GOO, POD, ZDR		
<b>ORGANIZATION AND COURSE OF THE LESSON</b>		
<b>LESSON STRUCTURE</b>	<b>ACTIVITY proposal</b>	<b>VALUATION</b> <i>VZU - evaluation for learning</i>  <i>VKU - evaluation as learning</i>



		<i>VN – evaluation of what has been learned</i>
<b><u>INTRODUCTORY PART</u></b>	-students discuss what can be seen in museums.	
<b><u>MAIN PART</u></b>	<p>Students visit and tour the museum</p> <p>They get to know the museum staff</p> <p>They are talking about museum materials</p> <p>Task for students: to record and edit a virtual tour of the museum with the Insta 360 One X2 camera</p> <p><b>Example:</b><a href="https://www.youtube.com/watch?v=3RPQwCxu5po">https://www.youtube.com/watch?v=3RPQwCxu5po</a></p> <p>- back to school, with digital programs: Insta 360 Studio, DaVinci Resolve and Spatial Media Metadata Injector, the teacher, with the help of students, processes the recorded material</p>	<p>- students are given clear instructions for work</p> <p>- monitoring student work during activities and providing assistance to students in need (VZU)</p> <p>-students follow the presentation/ and connect new content with what they have learned (VKU)</p> <p>- the teacher will evaluate the students with a grade (VN)</p>



<b><u>THE FINAL PART</u></b>	- the recorded material is presented on the school YouTube channel	
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