

## Tutorial 3: Sampling and Sample Manipulation

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**Objectives:** To provide the students an overview of sampling and sample manipulation.

**Method:** Each person will have a computer, a pair of headphones and will work with Reaper software.

**Outcomes:** Each student will import an audio file from freesound.org, will modify the sample by creating a loop, reversing, change the pitch and adding reverb,

**Instructor Materials:** Reaper, speaker, projector.

**Student material:** a computer per team, headphones, usb key, Reaper software.

### Lesson Plan

Topic	Activity	Material	Time
<i>Exercise</i>	<ol style="list-style-type: none"><li>1. Create a fade in with <b>volume</b> automation.</li><li>2. Create a fade out with the <b><i>fade in/out tool</i></b></li></ol>	Reaper	10min
Introduction	<ol style="list-style-type: none"><li>1. What is a sample?</li><li>2. What is sampling?</li><li>3. Types of sample manipulation:</li></ol>	Projector	5min
<i>Creating a loop</i>	<ol style="list-style-type: none"><li>1. Explain Tempo grid and snap tools.</li><li>2. Create a simple drum loop using the slice function (<b>using ctrl + “s”</b>).</li></ol>	Reaper	10min
<i>Reversing a loop</i>	<ol style="list-style-type: none"><li>1. Reverse an audio sample: <b>Item Settings -&gt; Reverse active take</b></li></ol>	Reaper	5min
<i>Changing the pitch</i>	<ol style="list-style-type: none"><li>1. Change the pitch of an audio sample: <b>Item properties -&gt; Pitch adjust (semitones)</b></li></ol>	Reaper	5min
Avoiding clipping	<ol style="list-style-type: none"><li>1. Set peak sample between -1 and -0.3 dB before rendering the project</li></ol>	Reaper	10min
		<b>Total Time</b>	<b>45min</b>

## Review from Tutorial 2: Parameter Automation

### Summary

To create a **volume** automation you can:

1. Make click in the “**Track/envelopes automation**” icon located in the track control panel.
2. Select “Automation mode: **write**”
3. Select “track envelope: **Volume**” and make sure it has “**visible**” and “**arm**” selected as well.
4. Hit the play button and use the **volume meter** to record the volume changes.
5. Another way to automate is using the *draw envelope tool* (**ctrl + mouse left button**)
6. To playback your automation select “Automation mode: **Read**”

To create a **panning** automation you can:

1. Make click in the “**Track/envelopes automation**” icon located in the track control panel.
2. Select “Automation mode: **write**”
3. Select “track envelope: **Pan**” and make sure it has “visible” and “arm” selected as well.
4. Hit the play button and use the **panning knob** to record the panning changes.
5. Another way to automate is using the *draw envelope tool* (**ctrl + mouse left button**)
6. To playback your automation select “Automation mode: **Read**”

To create a **fade in/out** you can:

1. Hover the mouse over the top corner at the very beginning or end of the sound file.
2. Make click and drag the mouse to the left/right (until you see a red curve).

### Exercise:

3. Create a new project with sample rate of 44100HZ and depth of 16 bits.
4. Import and audio file
5. Create a fade in with **volume** automation.
6. Create a fade out with the ***fade in/out tool***
7. Export sound file in wav format.