

## Pedagogy Approaches

The way virtual reality is implemented in the classroom can vary depending on factors like the number of headsets available, class size, room space, and lesson objectives. The choice of pedagogical approach is entirely up to the school or individual teacher, based on their preferred teaching style, subject area, and the unique needs of their students. There is no single 'right' way to use VR in education—what matters most is that it supports learning goals and student engagement. Below are several commonly used methods to consider when planning a safe and effective VR learning experience.

Below are several common approaches to using VR in the classroom, along with considerations for planning a safe and effective learning environment:

### Approaches to Teaching with VR Technology

- **Autonomous Learning:**

In this model, students use the VR headsets independently, working at their own pace. This is ideal for self-directed exploration, inquiry-based learning, and personalised tasks. Teachers can use this method during quiet work periods or when students are rotating through activities. Progress and outcomes can be tracked using the built-in email data collection system, allowing teachers to receive student reflections and answers directly to their inbox for assessment.

*Ideal for:* Independent learning, concept revision, or skills practice.

*Tip:* Provide clear instructions beforehand and use a timer to help manage session lengths.

- **Collaborative Learning:**

Students work in pairs or small teams—one student uses the headset while the partners record responses. Roles are then switched. This promotes peer communication, critical thinking, and teamwork, and can be especially effective when exploring complex concepts or completing challenge-based tasks. Using printed question sheets aligned to each difficulty level supports differentiated learning.

*Ideal for:* Paired problem-solving, science experiments, or humanities-based scenarios.

*Tip:* Encourage students to discuss what they see and why it matters. Use verbal prompts or guiding questions to support interaction.

- **Group Learning with Shared Reflection:**

In this approach, small groups of students take turns using the headset while the rest of the group observes or completes related tasks. The session ends with a whole-class discussion or group activity, helping students reflect on the experience and connect it to broader learning goals.

*Ideal for:* Concept introduction, group inquiry, or visual simulations tied to real-world applications.

*Tip:* Students follow with discussion prompts to promote reflection and synthesis.

- **Rotational Stations:**

VR is integrated as one of several stations in a classroom rotation model. While a few students use VR, others complete complementary tasks like worksheet activities, hands-on experiments, digital research, or group challenges. This maximises headset usage and allows all students to engage with the topic from multiple angles.

*Ideal for:* STEM projects, cross-curricular units, or lessons with limited devices.

*Tip:* Make sure non-VR tasks are clearly connected to the VR content to ensure continuity of learning. Assign roles or time slots to help manage movement between stations.

## **Key Considerations When Planning VR Lessons**

### **Passthrough or Full VR?**

Determine whether the VR experience is designed for mixed reality (passthrough)—where students can see the real world while interacting with digital overlays—or full immersion, where the student is completely inside a virtual environment.

- Full VR experiences require at least 2.4 square meters of clear space per student to ensure safe movement and interaction.
- Passthrough applications may require less or more physical space, but still benefit from a controlled and quiet environment to support focus and collaboration.

**Tip:** Clearly define boundaries with floor markers or mats, and remind students to stay within their play zones.

### **Parental Consent**

Before introducing VR in the classroom, review your school or district's policy on emerging technologies. Like internet or photo permissions, some schools require parental consent for students to participate in VR activities.

- This is important for students when using apps with user data collection (e.g., email submissions).

**Tip:** Include a short overview of how VR will be used in your class when sending consent forms home.

## Non-VR Activities

Since not all students will be using a headset at the same time, it's essential to plan engaging, purposeful non-VR tasks that complement the virtual experience. These activities should reinforce the same learning objectives as the VR content, ensuring that all students—whether inside or outside the headset—are working toward shared outcomes.

Here are some effective non-VR activity types:

- **Companion Worksheets**

Provide students with worksheets directly linked to the VR experience. These might include questions from the app, vocabulary tasks, data recording tables, or problem-solving scenarios that mirror what their peers are experiencing in VR.

- **Reflection Journals or Creative Responses**

Encourage students to reflect on what they saw, heard, or learned during their VR session. Those waiting their turn can write about what they expect to learn, predict outcomes, or draw scenes from the virtual environment. After their session, students can add personal reflections or compare their expectations to the actual experience.

- **Research or Design Activities**

Link the VR topic to real-world application. For example, if students explore a virtual ecosystem, non-VR students could research native species or design conservation posters. If the VR experience involves 3D modelling or architecture, students outside the headset could sketch blueprints or write up a design proposal.

**Tip:** Make sure non-VR activities are clearly introduced at the start of the lesson, with clear instructions and expected outcomes. Where possible, rotate students in short, timed intervals so everyone stays engaged and focused.

## Safety Requirements

Safety is essential when using VR. Create clear guidelines for safe headset use and classroom behaviour.

- Avoid obstacles, cords, or furniture near the learning area
- Ensure students to take regular breaks (every 15–20 minutes)
- Use headset straps properly and check for discomfort

**Tip:** Appoint a "safety spotter" in group settings to assist students and monitor movement.

## Physical Setup

Setting up the physical environment before a VR lesson is key to ensuring a smooth, safe, and focused learning experience. A well-prepared space not only supports safety and organisation but also gives teachers more time to focus on instruction rather than troubleshooting.

Here are key considerations for setup:

- **Space and Boundaries**

Full VR requires at least 2.4 square meters per student, free of obstacles like desks, chairs, cords, or backpacks. Use floor markers or mats to clearly define play zones, helping VR users stay safely within their area while also keeping students outside the VR experience at a respectful distance to avoid distractions or startling the user.

- **Device Readiness**

Make sure all headsets are fully charged, updated, and loaded with the correct applications before the lesson begins. Doing this ahead of time avoids downtime and keeps transitions quick.

- **Rotation and Flow**

If using multiple stations or rotational models, clearly label stations and prepare any necessary printed materials, devices, or timers. Have a clear plan for how students will move between VR and non-VR tasks.

**Tip:** Build a short pre-lesson routine: students collect their materials, sanitise hands and wipe headsets, students follow a simple set of VR rules posted on the wall. The smoother the routine, the more confident and independent the students will become in future sessions.

## Effective VR Learning Experiences

By thoughtfully selecting a teaching approach and addressing the logistical elements of VR integration—such as physical setup, safety guidelines, and complementary non-VR activities—teachers can create an engaging, inclusive, and safe learning environment. This process is driven by the teacher's professional judgment, taking into account the specific needs, learning styles, and objectives of the class. Teachers are empowered to choose the most effective pedagogical method, whether it's autonomous learning, collaborative projects, rotational stations, or group exploration, ensuring that the VR experience aligns with the unique dynamics of the classroom.

By doing so, teachers foster a dynamic learning experience that inspires students to explore, experiment, and engage with the material in ways tailored to their interests and needs. The flexibility in approach allows for a more personalized and effective use of immersive technology, helping every student reach their full potential.