Solution Guide:

Unity for 2D games

A practical guide to help you get started and gain the most value developing 2D games with Unity.
Welcome to Unity

Unity is not just a 3D engine, Unity is a complete platform for building beautiful and engaging 3D, and 2D, games. In fact, more 2D games are made with Unity than with any other game technology, and companies such as Disney, Electronic Arts, LEGO, Microsoft, NASA, Nickelodeon, Square Enix, Ubisoft, Obsidian, Insomniac and Warner Bros relying on our tools and features to drive their business.

Unity is a complete platform for 2D. It enables you to deploy to all the major and emerging mobile operating systems, speed up your development process, optimize your game, connect with an audience, and achieve commercial success.

This guide will take you through some of the most important steps of getting started and up to speed in Unity, finding key learning resources and planning out the lifecycle of producing a 2D game. It’s based on best practice principles that will make sense for you, regardless of your previous experience.

Ok, now let’s get started.

There’s more

If are interested in developing mobile games, we have also provided a “Unity for mobile” solution guide. The information in the Unity for mobile guide overlaps with this guide, however it contains more details specifically for the mobile platform.
Steps to Success

2D development success in just 4 steps.

01 Get
Pg: 04
Select your edition of Unity.

02 Learn
Pg: 05
Grow your knowledge.

03 Leverage
Pg: 08
Leverage assets and apply your skills.

04 Succeed
Pg: 10
Revel in your success.

Unity Insight

Learn how a hobbyist went from developing games in his spare time to growing into a thriving mobile game studio with seven full-time employees and games with more than 10 million downloads.

Read the Twitter case study
01 Get Unity

Choose the edition that’s right for you at, store.unity.com.

**unity Personal**

All the features for beginners and hobbyists to get started.

**unity Plus**

For serious creators looking to bring their vision to life.

**unity Pro**

For professionals looking to profit from advanced customization and complete flexibility.

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**Start Creating**

With tons of tutorials and ready-made assets, move efficiently from prototyping to full production with intuitive workflows that support your development every step of the way.

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If you run into issues or need help installing Unity - check this part of our manual, which will guide you through the process step-by-step.
02 Get up to speed

If you’re new to Unity, here’s our recommended learning resources to get started.

Once you’ve completed the material below, you’ll be ready to explore the wide range of tutorials in our learn section. We also offer extensive documentation about both scripting and the editor interface, as well as a list of best practice guides from our support engineers and R&D content team.

The Unity community also offers an extremely rich and diverse source of material. Just search the web for “Unity tutorial [Add the Topic of your interest]” and you’ll find lots of great resources.

You should also consider commercial training like the Complete Unity Course on Udemy, which offers a mix of 2D and 3D elements.

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2D UFO Tutorial
(approximately 2 hours)
Start out by creating a simple 2D UFO game, which introduces many of the principles of working with Unity and creating 2D games, including Game Objects, Components, Prefabs, Physics and Scripting.

2D Roguelike tutorial
Get an introduction to more advanced techniques, including how to create procedural tile based levels, implement turn-based movement, and add a hunger system, audio and mobile touch controls.

Dedicated 2D game creation section:
Find tutorials on specific features, 2D physics and videos of live training sessions.
Free Asset Store packages produced by Unity

Unity Technologies releases some features not included in the initial Unity installation as fully supported parts of the product, which are free to download on the Asset Store.

Here's a list of recommended packages to get:

**TextMesh Pro**
The ultimate text solution for Unity. It features advanced text rendering with dynamic visual text styling, along with greatly improved control over text formatting and layout. It will be natively integrated in future versions of Unity.

**2D Sprite pack**
These 2D sprites are provided by Unity Technologies for use in prototyping your 2D games.

**Anima2D**
Improves your 2D animation skeletal workflow. It will be fully integrated in future versions of Unity.

**Post Processing Stack**
The new Unity post-processing stack is an über effect that combines a complete set of image effects into a single post-process pipeline. However, be cautious when using these effects on a mobile platform, as they can impact performance.

**Standard Assets**
This collection of assets, scripts, and example scenes can be used to kick-start your Unity learning or as the foundation for your own projects.
Get involved in our community

Need Help? You can always ask the Unity community, or check out the forums for the latest community discussions.

If you get stuck, there is always help to be found in the Unity community. **Answers** is where our developers help each other with concrete answers to specific questions.

The **forums** are the central hub of our community discussions and chatter. Here you can voice your opinion, show what you’re working on, and check out the cool things others are doing.

External community & forum sites are also worth exploring for questions/discussions. Two particularly worthwhile forums to visit are **Stackoverflow** and **Reddit**.

There are also **Unity user groups** all over the world where you can get together with people in local groups to exchange ideas, work together on Unity projects and to socialize. Some groups also offers introductory seminars for new users.

Finally, if you need to find freelancers to help out, or when you are ready build your team, you’ll find the right talent on **Unity Connect**.
03 Plan out the lifecycle of making a game

Designing characters, gameplay mechanics and developing the logic are not the only aspects that matter in the lifecycle of making a game. Here are some other important actions you can take, including descriptions and how Unity helps for each.

Sync your project across the team to enable your team to work together efficiently.

> Unity Collaborate makes it easy to share your project online, invite participants and back up your projects.

Create continuous platform-specific builds on the relevant platforms as often as possible in order to detect early technical issues and distribute faster to your testers.

> Unity Cloud Build eliminates the burden of asking a developer or build engineer to make a binary version that testers can load on devices. You can simultaneously and effortlessly build for iOS & Android (and other platforms) in the cloud. And since Cloud Build is integrated with Collaborate, it works seamlessly for your entire team.

Understand the health of your game in order to fix any problems and avoid bad ratings. As soon as your game is live, it’s important to capture issues in real time.

> Unity Performance Reporting offers a complete crash reporting and analysis system to support that process.

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Plan out the lifecycle of making a game

Here’s a few more actions you can take to help your game to the next level.

Understand your audience and how they interact with your content in order to ensure retention and success.

> **Unity Analytics**, which is natively integrated with the Unity engine, provides invaluable insight into your audience’s behavior. This insight helps you optimize your gameplay experiences and monetization strategies based on real-time game data.

Choose the right monetization model at an early stage in order to make sure it is well integrated with your game mechanics.

> For free-to-play games, Unity has a built-in ads platform and offers **codeless IAP integration**. Combine our plug & play **Unity Ads, IAP** and **Analytics** to improve your ARPDAU (Average Revenue Per Daily Active User) and user retention.

Next Games is among the first to successfully monetize a battle builder mobile game using rewarded video ads. Download their case study to find out how they created well integrated rewarded video ads that have a high opt-in rate and drive $0.06 average revenue per player per day. **Read the Next Games case study**

Learn how Mindstorm, one of Pakistan’s leading game developers, is using Unity’s built-in analytics to anticipate player needs and continually improve their games. **Read the Mindstorm case study**
04 More support resources

Unity’s official certification program
The courseware focuses on the foundational skills essential to game production with Unity and directly maps to preparation for the Unity Certified Developer Exam. It’s also a great solution if you are looking for a structured, self-study program to help you learn to make games with Unity.

Best practices in Unity
Unity is a complex, feature-rich platform offering many solutions to various problems you are likely to encounter in game development. As such, there are many opinions on what the best practices are for organizing your projects, building game logic and object oriented programming patterns and for various techniques when working in the editor.

Nevertheless, there are certain basic principles, which if followed, will save you time and help you focus more on the creative aspects of game development. We’ve collected a few of these basic best practices from our Enterprise Support engineers and the Unity R&D Content team. We’ve also created a compilation of some of the best practices compiled in this blog article.

Need help with C# scripting in Unity?
If you are new to C# programming, we suggest that you visit our dedicated scripting section, which offers learning material on both beginner and advanced topics. If you’re already familiar with programming but need help with specific coding questions, we recommend using our answers section, where you can post and find answers to your coding questions from the community. We also have an extensive scripting reference guide, which offers guidance on the scripting API that Unity provides.

If you’re coming from Objective C or C++ and are new to C#, we also recommend the following blog article.

Are you a teacher?
We offer a whole range of support options for teaching, including free licenses for students and academic institutions and a Curricular Framework for developing a relevant set of courses.
Where to go next?

We hope this solution guide has helped you get a great start on your Unity development project. Remember, when you choose Unity you’re never alone. Our community pages are a great place to connect and find solutions to the issues you may encounter. We also encourage you to follow us on Twitter, Facebook, Youtube, Linkedin and on the Unity blog, where you’ll find tips and guides to various facets of the Unity features, as well as product news, updates and inspirational case studies.