

Video Game Academy

Positive Learning from Video Games

Worksheet



HackingHighSchool.net

Positive attributes and skills

For the parent: watch your kids play. In the list below, check the first box of the positive attributes and skills they're exposed to in the game they currently play the most.

For the student: check all in the second box that you feel you are learning in the game you currently play the most.

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> <input type="checkbox"/> Active, critical thinking and learning | <input type="checkbox"/> <input type="checkbox"/> Master meaning-making skills, which can be transferred to other opportunities in life | <input type="checkbox"/> <input type="checkbox"/> Parallel processing | <input type="checkbox"/> <input type="checkbox"/> Familiarity with other sciences |
| <input type="checkbox"/> <input type="checkbox"/> Literacy practices | <input type="checkbox"/> <input type="checkbox"/> Precursor for learning sciences | <input type="checkbox"/> <input type="checkbox"/> Random access/"hypertext" minds | <input type="checkbox"/> <input type="checkbox"/> Economics skills |
| <input type="checkbox"/> <input type="checkbox"/> New (and valuable!) identities (not only identities of characters you play, but identities like that of scientist) | <input type="checkbox"/> <input type="checkbox"/> Precursor for learning anything related to the game or its design | <input type="checkbox"/> <input type="checkbox"/> Focus on graphics | <input type="checkbox"/> <input type="checkbox"/> Business skills |
| <input type="checkbox"/> <input type="checkbox"/> Get intrinsic rewards for learning | <input type="checkbox"/> <input type="checkbox"/> Create flow | <input type="checkbox"/> <input type="checkbox"/> Connection with others | <input type="checkbox"/> <input type="checkbox"/> Management skills |
| <input type="checkbox"/> <input type="checkbox"/> Extend personal confidence through mastering levels | <input type="checkbox"/> <input type="checkbox"/> Multiplayer games teach cooperation and social interaction | <input type="checkbox"/> <input type="checkbox"/> Active learning | <input type="checkbox"/> <input type="checkbox"/> Cooperation |
| <input type="checkbox"/> <input type="checkbox"/> Solid definitions of words and ideas based on experience | <input type="checkbox"/> <input type="checkbox"/> Gamers learn how to overcome difficulty. | <input type="checkbox"/> <input type="checkbox"/> Focus on play | <input type="checkbox"/> <input type="checkbox"/> Ethics |
| <input type="checkbox"/> <input type="checkbox"/> Improved cognitive skills | <input type="checkbox"/> <input type="checkbox"/> How to create | <input type="checkbox"/> <input type="checkbox"/> Need for payoff | <input type="checkbox"/> <input type="checkbox"/> Health |
| <input type="checkbox"/> <input type="checkbox"/> Improved visual memory | <input type="checkbox"/> <input type="checkbox"/> An opportunity to share one's creations | <input type="checkbox"/> <input type="checkbox"/> Emphasis on the casual | <input type="checkbox"/> <input type="checkbox"/> Game-specific skills |
| | <input type="checkbox"/> <input type="checkbox"/> Twitch speed | <input type="checkbox"/> <input type="checkbox"/> Comfort with technology | <input type="checkbox"/> <input type="checkbox"/> Decision-making skills |
| | | <input type="checkbox"/> <input type="checkbox"/> Codesign with the game designer | <input type="checkbox"/> <input type="checkbox"/> Strategy |
| | | <input type="checkbox"/> <input type="checkbox"/> Communication skills | <input type="checkbox"/> <input type="checkbox"/> Tactics |
| | | <input type="checkbox"/> <input type="checkbox"/> Deep connection to written texts (like websites, strategy guides, etc.) | <input type="checkbox"/> <input type="checkbox"/> Educated risk-taking |
| | | <input type="checkbox"/> <input type="checkbox"/> Ability to read above grade level | <input type="checkbox"/> <input type="checkbox"/> Flexibility |
| | | <input type="checkbox"/> <input type="checkbox"/> Direct application of mathematics | <input type="checkbox"/> <input type="checkbox"/> Adaptability |
| | | <input type="checkbox"/> <input type="checkbox"/> Familiarity with physics | <input type="checkbox"/> <input type="checkbox"/> Initiative |
| | | | <input type="checkbox"/> <input type="checkbox"/> Self-direction |
| | | | <input type="checkbox"/> <input type="checkbox"/> Creativity |
| | | | <input type="checkbox"/> <input type="checkbox"/> Innovation |



- Critical thinking
- Problem solving
- Collaboration
- Information literacy
- Commitment to excellence
- Self-knowledge
- Competence
- Competition
- Interest in data
- Multi task
- Confidence

- Practice
 - Knowledge of how your brain works
 - How to complete tasks
 - Analysis
 - Research
 - How to think like a scientist
 - How to understand the world in terms of scenarios
 - Focus
 - Productivity
- Where did you agree? Why?

Where did you disagree? Why?

What are the most valuable things to learn on this list? Why?

Are those the things you're learning in your game?

If not, explore your options: how can you focus on learning those valuable things in the game?

What positive attributes are in these particular situations:

Intense moments. Watch for the gamer to be sitting on the edge of their seat, rapt attention.

Post-game or post-intense moment. How do they react? Do they review what just happened?



Interactions with other characters, especially human characters.

Working toward a long-term goal. How does the gamer prepare for the goal? What things, that might not be valuable now, do they collect or do so they can accomplish that goal?

Dangers. How do they deal with threats in the game? For example, in an empire-building game, how do they deal with another country that is threatening to take control of their cities?

What identity does your gamer take on in this game? What positive attributes go with that?

Rewards. From your perspective, why did they receive a reward? Ask your gamer why they thought they received the reward.

Decisions. What decisions did they make and why? Decisions occur frequently in games.



36 principles applied to your education

1) Active, Critical Learning Principle

Everything in the environment is designed to encourage active, not passive, learning.

What is your environment like?

2) Design Principle

Learning about and appreciating design and design principles is essential to learning.

How did the lesson on video game design help you learn about video games?

How would a lesson on learning design (like our lesson on how the brain works) help the student learn better?

3) Semiotic Principle

Learn about and come to appreciate interrelations within and across multiple sign systems (images, words, actions, symbols, artifacts, etc.) as a complex system.

We do this all the time. The “system” of ancient Egyptian history comes in multiple sign systems: hieroglyphs, artifacts, mummies, books, archaeological evidence, etc.

4) Semiotic Domains Principle

Learning involves mastering, at some level, semiotic domains, and being able to participate, at some level, in the groups connected to them.

What groups are connected to the semiotic domain of homeschooling?

How do you participate in those?

What about more general groups connected to the domain of high school education or college preparation?



5) Meta-level thinking about Semiotic Domain Principle

Learning involves active and critical thinking about how this particular semiotic domain (like the video game you're playing) is related to other domains (like Romeo and Juliet or mathematics).

Take two domains that interest you and analyze: what are the connections between them? What is similar? What is different? How do the similarities manifest themselves differently in the different domains?

6) "Psychosocial Moratorium" Principle

In games, the risk of real-world consequences are lowered, providing a better learning opportunity.

How does the idea of restarting or extra lives lower the risk in games?

What is the risk in education? How could the idea of extra lives lower that risk? How would that be beneficial?

7) Committed Learning Principle

People put lots of effort and work into games as an extension of their real-world selves because they feel some commitment to their virtual identity (e.g., their character) and they find the virtual world interesting.

How can you make your homeschool interesting, so the student will feel commitment to it?

How can your gamer develop their "student" identity and see it as an extension of their real-world self?

8) Identity Principle

Learning involves taking on and playing with identities (or characters) in a way that the learner has real choices and plenty of opportunity to think about the relationship between new identities and old ones.

What identities does the student take on in the topic you're studying? That of scientist? Writer? Mathematician? Explorer? Biographer?



9) Self-Knowledge Principle

Games are made so players learn about themselves, their capacity, and their potential.

How does a game help the player know their capacity and their potential?

How can your homeschool do the same?

10) Amplification of Input Principle

For a little input, learners get a lot of output. In other words, you get a lot more value than what you put in.

If your student is putting 10 minutes of effort into homeschool, what value are they getting out of those 10 minutes?

How can you create opportunities that give more value to the student (not necessarily to the parent or to the parent's aspirations)?

11) Achievement Principle

For all skill levels, there are intrinsic rewards from the beginning, customized to the learner's level, effort, and growing mastery. The rewards are an indication of the learner's ongoing achievements.

What rewards are there in your homeschool?

When the student gets these rewards, are they an indication that they have achieved something?

What are the intrinsic rewards in this education?

How are those rewards customized to the student?



12) Practice Principle

People will practice a LOT when it's not boring to practice.

What does the student find boring to practice or repeat?

How can you make that not boring?

13) Ongoing Learning Principle

Students must, at higher and higher levels, undo their automatic skills to adapt to new or different conditions. The cycle repeats itself: new learning, automatic skills, undo automatic skills, reorganize skills.

When you learn (or teach) new things, consider this cycle. Do you experience these steps? Which is hardest for you? Easiest?

14) "Regime of Competency" Principle, aka: Flow

The learner gets ample opportunity to operate within, but at the outer edge of, his or her skills, making it challenging but not impossible.

What is too easy? How can you make that harder?

What is too hard? How can you make that slightly easier?

15) Probing Principle

Learning is a cycle of probing the world (or doing something); reflecting on this action and, on this basis, forming a hypothesis; reprobating the world to test this hypothesis; and then accepting or rethinking the hypothesis.

This is the scientific method, but you can use it more than just in science. Consider using the probing principle as you look at the other 35 principles here. Probe the world. Reflect on this action: does the principle work in this situation? Form a hypothesis and reprobe.



16) Multiple Routes Principle

There is more than one path to success. This idea allows learners to make choices, rely on their own strengths and styles of learning and problem-solving, while also exploring alternative styles.

What does “success” mean to the student? To the parent?

Where the student is struggling, can you find an alternate route to success? Consider especially routes that require or emphasize the student’s specific strengths, style of learning, and problem-solving masteries.

If one type of problem is always solved one type of way, can the student explore different routes to success/problem solving?

17) Situated Meaning Principle

People understand the meanings of signs (words, actions, objects, artifacts, symbols, texts, etc.) through actual experience. Meanings are not learned out of context.

18) Text Principle

Texts are understood in terms of actual experience. Learners can understand text outside of experience only when they have enough experience in the domain and plenty of experiences with similar texts.

What texts are you reading right now in your homeschool?

What experiences can the student relate to this text?

What similar texts has the student read?



19) Intertextual Principle

The learner understands texts in relation to others in a family or genre of related texts, but only after having experienced understandings of some texts. Understanding a group of texts as a family is a large part of what helps the learner to make sense of texts.

What genre is this text in (fantasy, science fiction, poetry, etc.)?

What other texts that the student has read are in this genre?

What are their similarities, their “family features,” if you will?

How are they different?

Which texts does the student relate to the most?

20) Multimodal Principle

Meaning and knowledge are built up in multiple modes (like images, texts, symbols, interactions, abstract design, sound, etc.), not just words.

For example, not just reading about animals in a book, but seeing and smelling and hearing them at the zoo is a multimodal experience to build up meaning and knowledge.

How can you create more than one mode of learning?



21) "Material Intelligence" Principle

Thinking, problem-solving, and knowledge are "stored" in material objects and the environment. Think of the last time you had an idea, but forgot it as soon as you left the room. Then when you came back in the room, you remembered the idea. This is the principle of Material Intelligence. When knowledge is "stored" like this, learners are free to combine the results of their own thinking with the knowledge stored in material objects and the environment to achieve powerful effects.

The first time I heard of this idea, I was about 7 years old, watching Sleeping Beauty. I was skeptical, munching on my string cheese. "So, I'll always remember eating string cheese while watching this scene? Yeah, right." But I do. Because the memory of eating string cheese is "stored" in that scene in the movie, and whenever it comes on, I recall the memory.

What memories does smelling your grandma's homemade cookies evoke?

What memories does seeing the ocean bring up?

How does the student "store" memory in the environment or materials?

22) Intuitive Knowledge Principle

Intuitive or tacit knowledge built up in repeated practice and experience is valued and honored.

How can you value intuitive knowledge?

How do you demonstrate that value?

How can you build up and practice correct intuitive knowledge?



23) Subset Principle

Learning, from the start, takes place in a (simplified) subset of the real domain

How is your homeschool a simplified situation of the real domain? This could help you create some spectacular learning experiences--instead of viewing your homeschool as a place to read textbooks and fill out worksheets, it can become a place where you re-create, in a simple form, a surgery, or re-create the writing of the Great American Novel, or re-create an archaeological dig.

24) Incremental Principle

Learning is structured so the things you learn can be applied to later similar situations.

How is learning structured in your homeschool? Consider first how the materials you use structure information. Do you need to change the structure?

25) Concentrated Sample Principle

The important stuff appears in the early stages more often than it normally would so students practice and learn them well.

Let's go back to your re-creations from principle 23: how can you make the important knowledge appear more frequently in the beginning of those re-creations?

26) Bottom-up Basic Skills Principle

Basic skills are not learned in isolation or out of context; rather, what counts as a basic skill is discovered bottom up by engaging in more and more of the game/domain or games/domains like it. For example, gamers learn how to use the keyboard in a computer game because it's used similarly in most computer games. Students studying science learn the scientific method because it's used similarly in most sciences.

What are the basic skills in high school? In a specific subject? What are the basic skills necessary to live a successful adult life?

How can the student be engaged in those basic skills in a range of experiences?



27) Explicit Information On-Demand and Just-in-Time Principle

The learner is given explicit information both on-demand and just-in-time, when the learner needs it or just at the point where the information can best be understood and used in practice.

Just-in-time information given to the student can appear different in different situations. It could be that the student looks up the information themselves, right when they need it. Perhaps the student asks the parent for advice. Maybe the student emails an expert with their questions.

28) Discovery Principle

Lecturing, in any form, is kept to a minimum. Instead, students experiment and discover the information.

How can the student be presented information in a way that they experiment and discover it themselves? This question implies that the parent is okay with a “sandbox” type of learning environment, where it is okay for the student to “play around” with ideas. Is that the case in your homeschool? Can that change?

How can a student “play around” with the next topic that’s coming up in your homeschool curriculum?

29) Transfer Principle

Games encourage and teach players to transfer what they learned earlier to later problems, including adapting and transforming that earlier knowledge.

How has the student adapted and transformed knowledge to a later problem? Watch their steps carefully, and explicitly explain the steps they naturally took, so they can use the same steps again, but consciously.

30) Cultural Models about the World Principle

Students become more aware of and reflect on their cultural models of the world, without threatening their identities, abilities, or social circles. They also compare these models with new, and sometimes conflicting, models.

What are cultural models about the world?

How does your learning environment expose the student to different models?



How can the environment do so without threatening the identity, ability, or social circle of the student?

How can the student be more aware of how they learn, how their mind works?

Are there any cases where the learning should threaten the identity, ability, or social circle?

Is learning about learning important enough to be a separate topic in your homeschool?

How can conflicting models change the student without threatening their identity, ability, or social circle?

How can conflicting models change the student without threatening their identity, ability, or social circle?

31) Cultural Models about Learning Principle

Students become more aware of and reflect on their cultural models of learning, without threatening their identities, abilities, or social circles. They also compare these models with new, and sometimes conflicting, models.

What are cultural models of learning?

32) Cultural Models about Semiotic Domains Principle

Students become more aware of and reflect on their cultural models about a particular semiotic domain they are learning, without threatening their identities, abilities, or social circles. Once again, they also compare these models with new, and sometimes conflicting, models.

What are cultural models about semiotic domains?



How does your learning environment expose the student to different models?

33) Distributed Principle

Meaning and knowledge is distributed across the learner, objects, tools, symbols, technologies, and the environment.

Where and how does the student “store” a majority of their knowledge? In sensory memories? In visual clues? In writing? In their smartphone apps?

How can the environment do so without threatening the identity, ability, or social circle of the student?

34) Dispersed Principle

Meaning/knowledge is dispersed in the sense that the learner shares it with others outside the domain/game, some of whom the learner may rarely or never see face-to-face.

Who holds knowledge that is important or useful for the student? How do they transfer knowledge to the student? How does the student transfer knowledge to others?

Are there any cases where the learning should threaten the identity, ability, or social circle?

How can conflicting models change the student without threatening their identity, ability, or social circle?

35) Affinity Group Principle

Students are part of an “affinity group,” bonded primarily through shared endeavours, goals, and practices, and not based on shared race, gender, nation, ethnicity, or culture.

What “affinity groups” does the student identify with most? What goals do they share? What is important to them?



How can the student make use of this “affinity group” to learn more or better?

36) Insider Principle

Instead of being a consumer, the student is an “insider,” “teacher,” and “producer,” and customizes the learning experience and the domain/game from the beginning.

What opportunities can the student take to teach? How can the student gain “inside information” on this topic? How can the learning experience be customized? What are the acceptable parameters for customization (for example, the parent allows the student to choose what biology topic to study, but does not give the option to drop or take biology. Another example: perhaps, once chosen, a subject must be studied for at least two weeks and not dropped on a whim)?



7 habits

Ways to transfer the 7 habits from the world of gaming to the world of life.

For the student: do you feel like you use any of these habits in your gaming?

Does you use of the habits in video games improve your mastery of the habit outside the game?

Pick one habit. How can you focus on it as you play games? As you explore life?

How do those habits improve your game?

How would you rate your mastery of each habit? (Circle one)

- | | | |
|------------|--------------|-------|
| 1 Mastered | Intermediate | Basic |
| 2 Mastered | Intermediate | Basic |
| 3 Mastered | Intermediate | Basic |
| 4 Mastered | Intermediate | Basic |
| 5 Mastered | Intermediate | Basic |
| 6 Mastered | Intermediate | Basic |
| 7 Mastered | Intermediate | Basic |

Do you ever use any of these habits outside your video games? How so?



What kids can learn on their own

What is tedious for the parent to teach?

Look harder. Are they learning anything else, anything at all? If you have a purpose statement that answers “What is the point of high school?”, compare their activities to that list. Are there any activities that correlate?

Is there an opportunity for the student to learn that on their own? To discover it?

What do the students do on their own?

What are they learning from those activities?

