

## Make your own juggling balls and learn how to juggle with 3 balls

General information			
Respective blueprint	Make your own juggling balls and learn how to juggle with 3 balls.		
Description	Every child wants to learn juggling once in their life. In this case, the child often had an inexplicable need to try with apples or oranges and mostly failed. Juggling can be a hobby, sport, art or both, and scientifically proven to have many advantages for children's body development.		
Learning objectives	<ul style="list-style-type: none"> <li>• Understanding mechanics while making juggling balls because juggling balls don't roll when you drop them</li> <li>• Connecting the left and right sides of the body and the brain during practising juggling</li> <li>• improves hand-eye coordination and motor skills, which is very useful for various games and skills</li> <li>• maintains and increases the range of the motion of arms and shoulders</li> <li>• understanding the connection between mathematics and juggling</li> <li>• improves awareness of the rhythm that is presented in many things in a child's life –dance, music</li> </ul>		
Related curricular subjects	Math, Engineering, Art, Science		
Duration	90 min		
Level of difficulty	Basic	Medium	Advanced
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Inclusivity guidelines			
How to integrate students with SLD	<ul style="list-style-type: none"> <li>• Present the important items in bullet points.</li> <li>• Use a multisensory approach: wherever possible, provide different ways for learners to interact with the content</li> </ul>		
How to integrate students who work faster	Students can compare their development in juggling before and after this workshop. They can ask themselves if they know how to juggle before the workshop and how to juggle now.		

## Step-by-step description of the lesson

Step 1: Introduction	Estimated time: 15 min
<ul style="list-style-type: none"> <li>introduce students to juggling, juggling balls and the benefits of juggling</li> <li>follow the presentation in the attachment, where describes the basic facts of juggling, the benefits of juggling, the difference between normal and juggling balls and the connection between juggling and mathematics</li> <li>students make pairs</li> </ul>	
Step 2: Making balls	Estimated time: 60 min
<ul style="list-style-type: none"> <li>Prepare the material needed</li> <li>By following blueprints, each pair makes their juggling balls</li> <li>Then, each student, by following the video in the attachment, learns how to juggle with 3 balls step by step</li> <li>At the end, students compare results and make a conclusion</li> </ul>	
Step 3: Evaluation	Estimated time: 15 min
<ul style="list-style-type: none"> <li>Each student fills out a self-evaluation template for group work</li> <li>Each student answers the questions on the worksheet</li> </ul>	

## Assessment activities

Activity 1: Self-evaluation of the group work

Each student self-evaluates the group work using a template for self-evaluation.

Activity 2: Answer the questions

Answer the questions using the questions worksheet in the attachments.

## Attachments

- Presentation
- Video-detail explained- how to juggle with three balls
- Video- short recap- how to juggle with three balls
- Self-evaluation template
- Questions worksheet

REFERENCES:

[https://www.mariowiki.com/Mario the Juggler](https://www.mariowiki.com/Mario_the_Juggler)

<https://www.deviantart.com/robbyskylark/art/Sonic-and-Tails-balancing-and-Juggling-900085885>

[http://www.circopedia.org/Anthony Gatto](http://www.circopedia.org/Anthony_Gatto)

[http://jugglefit.com/jf\\_benefits.html](http://jugglefit.com/jf_benefits.html)

<http://www.learntojuggle.net/448%20pdf%20files/Benefits.pdf>

<https://hrcak.srce.hr/file/370870>

[https://commons.wikimedia.org/wiki/Category:Juggling\\_in\\_ancient\\_Egypt#/media/File:Jugglers\\_Egypt\\_\(cropped\)](https://commons.wikimedia.org/wiki/Category:Juggling_in_ancient_Egypt#/media/File:Jugglers_Egypt_(cropped))

### SELF-EVALUATION OF THE GROUP WORK

WHAT IS EVALUATED?	✓ OR -
A. We completed the task successfully.	
B. All members of the group participated in the execution of the task.	
C. Each member of the group performed their part of the task responsibly.	
D. During the work in the group, we respected each other's different opinions.	
E. My participation in the execution of the task significantly contributed to the final results of the work.	
F. Working in a group makes it easier for me to understand the topic.	
G. I can successfully explain the topic we learned about by working in a group.	

## Questions :

**Answer the questions: Make your juggling balls and learn how to juggle**

**1. What are the main characteristics of juggling balls?**

**Circle the correct answers.**

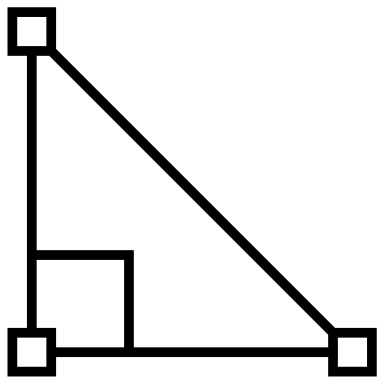
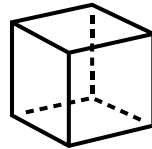
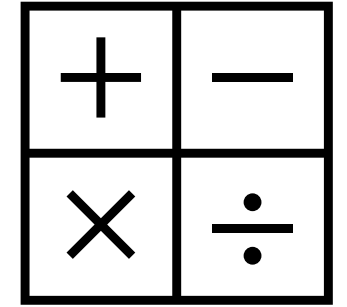
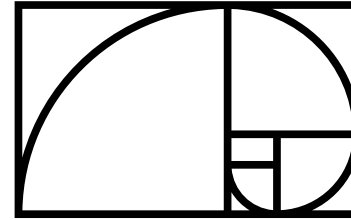
- A. They roll and bounce when you drop them
- B. They don't roll when you drop them
- C. They are filled with sandy material
- D. They are empty inside

**2. What is the name of the fundamental juggling trick with three balls?**

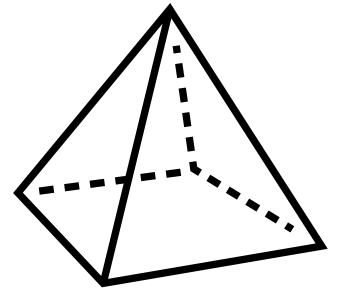
**Circle the correct answer.**

- A. 3 balls shower
- B. 3 balls cascade
- C. 3 balls box

**3. List at least three benefits of juggling.**



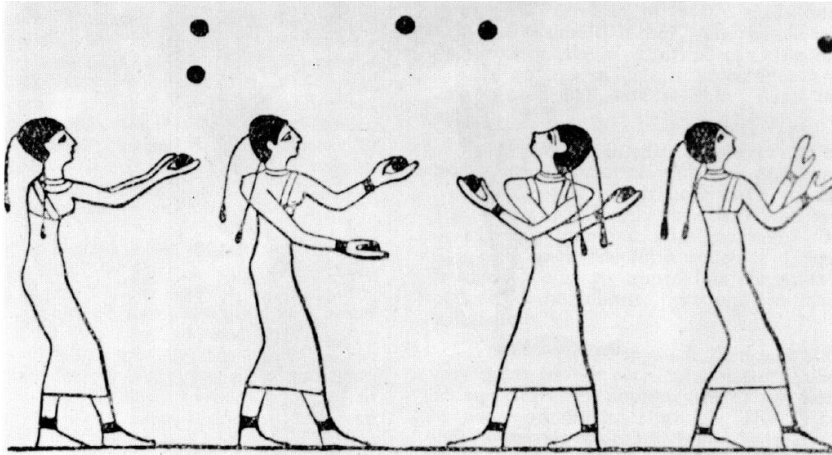
# JUGGLING BALLS



## Definiton:

- a) more or less physically throwing and catching things.
- b) To perform a visually complex and/or physically challenging feat using one or more inanimate objects as principals, which most people do not know how to do, and which furthermore has no real purpose other than entertainment, where the methods of manipulation are not mysterious.





Juggling has very old tradition:  
ancient Egyptian picture of  
jugglers



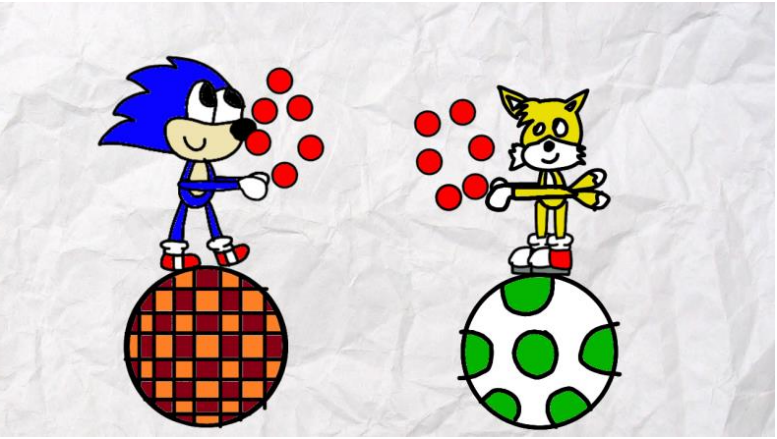
One of the most famous juggler  
Anthony Gatto during  
performance in circus in Monte  
Carlo

## **Benefits of juggling:**

- is an exercise that doesn't feel like exercise
- is truly portable workout. You can juggle wherever you are.
- allows the left and right side of body and brain to become more equal and well balanced
- improves hand-eye coordination and motor skills, which is very useful for various games and skills
- maintains and increases the range of the motion of arms and shoulders
- improves awareness of the rhythm that is presented in many things in children's life –dance, music
- relieves stress because it can achieve a state of relaxed concentration
- gives the feeling of achieving results because in juggling you can always find new challenges



Students see immediately that juggling is like video game with innumerable levels, but the juggler is "Sonic Hedgehog" or "Super Mario". He or she takes all of the spills (drops) and gets to start over again and again.



- Difference between **tennis balls** and **juggling balls**:

Tennis balls:

- roll and bounce when you drop them
- They can bounce out of your hands



Juggling balls:

- don't roll when you drop them (you don't have to find them when they drop)
- sandy and squishy material inside the balls makes them less likely to bounce out of your hands



## Connection between **juggling** and **mathematics**

- Every juggling trick can be notate with group of numbers in some order (notation is called SITESWAP)
- In mathematics this group of numbers is called mathematical sequence
- Every digit in sequence represents the hieght and direction of the throw
- So don't think that jugglers are throwing and catching balls and clubs without order and rythm)

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