

GRIPABLE

Detailed activity descriptions

Balloon Buddies

- Requirements – **Grip and release**
- Encourages – **Control in grip and release, endurance or strength**

This activity targets controlled grip and release. The goal is for the user to control the owl which is suspended from the balloon. The owl needs to collect all the stars to gain points. Squeezing GripAble inflates the balloon to make the owl go up the screen. Releasing GripAble brings the owl down the screen. The levels give increased time and complexity of control required. The emphasis is on smooth transition between grip and release. The placement and the smoothness of the curve of stars alters through the levels to give gradual increase in demand.

The "Next" button can be triggered by squeezing GripAble or using the touch screen.

Level 1	50 active seconds. 30 stars. Smooth transitions through grip and release in the lower range
Level 2	50 active seconds. 30 stars. Smooth transitions through grip and release in the mid-range.
Level 3	48 active seconds. 30 stars. Smooth transitions through grip and release in the higher to mid-range.
Level 4	50 active seconds. 30 stars. Smooth transitions through grip and release from lower to higher range. Three bombs to avoid.
Level 5	50 active seconds. 30 stars. Erratic transition through higher and lower range. Three bombs to avoid.
Level 6	49 active seconds. 30 stars. Erratic transition through higher and lower range. Three bombs to avoid.
Level 7	49 active seconds. 30 stars. Erratic transition through higher and lower range. Three bombs to avoid.
Level 8	40 active seconds. 30 stars. Erratic transition including to peak and base. Three bombs to avoid.
Level 9	40 active seconds. 30 stars. Erratic transition, avoidance items including three bombs and three blocks (cause 3 seconds of owl being unable to collect stars).
Level 10	52 active seconds. 40 stars. Smooth transition to both peaks with four bombs and three blocks.

Circus Escape

- Requirements – **Grip and release**
- Encourages – **Control and fast reaction in grip and release, endurance**

This activity targets controlled and fast reaction in grip and release. The goal is for the user to power the bear on the cycle along the course without falling off the cliff. The user will need to squeeze with more intensity and harder as the cycle moves up hills. The levels increase in complexity and length as they progress. There is a natural break within each level as the user waits for the hazards to reach the point of safe movement however, this is a very intensive activity with a minimum of about 40 grip/release cycles on level 1 and 140 grip/release cycles on level 10.

The "Next" button can be triggered by squeezing GripAble or using the touch screen.

The time taken to complete each level depends on the speed the cycle is powered as well as the length of the course.

Level 1	Straight course with no hazards
Level 2	Two blue, horizontal, hazards
Level 3	Three yellow, vertical, hazards
Level 4	Two blue and two yellow hazards
Level 5	Three blue and four yellow hazards
Level 6	Three pink, circular, two blue and one yellow hazard
Level 7	Three launch ramps, three blue, two yellow and two pink hazards
Level 8	Three yellow, two blue and one pink hazard
Level 9	Three launch ramps, three yellow, two blue and two pink hazards
Level 10	Four pink and four yellow, three launch ramps and one blue hazard

Concierge

- Requirements – **Wrist extension / flexion and Grip / release**
- Encourages – **end of range wrist extension, control of movement with recruitment of grip, planning and decision making**

In this activity the concierge in the hotel lift is controlled by moving the wrist into extension and flexion. The job of the concierge is to take the lift to the floor where someone needs to enter the lift or a service needs to be collected – always from the left and make the delivery on the right. The lift door is opened using grip. All services and people need to be delivered during the day shift and only one delivery can be made at a time. Time is indicated by the sun rising on the left and setting on the right.

Level 1	Two hotel storeys. Four "green" people
Level 2	Three hotel storeys. Six "green" people
Level 3	Three hotel storeys. Five "green" people and eight pizzas
Level 4	Four hotel storeys. Five "green" people and eight pizzas

Level 5	Four hotel storeys. Five “green” people, three pizza deliveries and four housekeepers to clean
Level 6	Five hotel storeys. Six “green” people, four pizza deliveries and four housekeepers to clean
Level 7	Six hotel storeys. Five “green” people, five pizza deliveries, four housekeepers to clean and one VIP landing by helicopter on the roof to take to their room
Level 8	Six hotel storeys. Six “green” people, five pizza deliveries, three housekeepers to clean and one VIP landing by helicopter on the roof to take to their room
Level 9	Six hotel storeys. Six “green” people, three pizza deliveries, seven housekeepers to clean, two drinks to deliver and one VIP landing by helicopter on the roof to take to their room
Level 10	Seven hotel storeys. Six “green” people, five pizza deliveries and four housekeepers to clean, five drinks to deliver and two VIPs landing by helicopter on the roof to take to their room

Additionally, each type of delivery is worth differing “tips” and therefore a further therapeutic extension of the activity is to include the problem solving when prioritising which service / person to deliver first.

Green Person	Take to room - Worth £4.60 each
Pizza	Deliver room service - Worth £2.40 each
Bucket	Roomkeepers to clean – Worth £3.20 each
Blue Person	VIP to take to room – Worth £9.20 each
Drink	Deliver drinks room service – Worth £8.50
Deliveries to VIP rooms	Worth a double tip

Four in a Row

- **Requirements - Pronation/ Supination and Grip/Release**
- **Encourages** – Controlled movement through range recruiting grip when steady

In this activity, movement of GripAble through pronation and supination moves the counter left to right and a squeeze drops the counter into the chosen lane. This is the classic four-in-a-row activity where two players compete to drop four counters in a row vertically, horizontally or diagonally. When it is the other players turn, it will say so.

When entering the activity there are two options: playing against the AI computer or playing against any other GripAble user who is in the “players lobby”. If there are no live players, the app will tell you.

Option 1	Play against the computer choosing easy, medium or hard. This activity can be repeated and the difficulty level altered to suit
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Option 2	Play against another live player. Select the player you wish to challenge. They will be sent a notification. Once they accept your challenge, you will meet online. You have the choice whether to mute your device or not. Use the button in the bottom left corner to toggle on and off the sound. At the end of your game, you will be taken back to the players lobby.
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Little Rocket

- Requirements – **Pronation/supination**
- Encourages – **Range of movement through pronation and supination**

In this activity, you navigate right and left across the screen avoiding being hit. The shooting is automatic. As each level progresses, the enemy ships become more complex. There are 20 levels plus an arcade level. Arcade level is continuous so each time you play, you can try to improve your score. Stay playing until you lose all your lives. See detail below:

Level 1	Introduce Strafers which move horizontally. No special effects
Level 2	More Strafers
Level 3	Introduce Divers which dive down vertically
Level 4	Strafers and Divers
Level 5	BONUS ROUND
Level 6	More Strafers and Divers
Level 7	Even more Strafers and Divers
Level 8	Introduce Darters which lock on the player and then shoot towards them in a straight line
Level 9	Strafers, Divers and Darters
Level 10	STRAFER BOSS BATTLE
Level 11	More Strafers, Divers and Darters
Level 12	Introduce Slomers which move down following a wavy line
Level 13	Strafers, Divers, Darters and Slomers
Level 14	More Strafers, Divers, Darters and Slomers
Level 15	BONUS ROUND
Level 16	Even more Strafers, Divers, Darters and Slomers

Level 17	Introduce Loopers which move towards the player while moving in circles, creating a spiralling motion
Level 18	Strafers, Divers, Darters, Slalomers and Loopers
Level 19	More Strafers, Divers, Darters, Slalomers and Loopers
Level 20	DIVER BOSS BATTLE

Each level introduces new enemy formation patterns, with the patterns themselves getting bigger and resembling crazier shapes as the levels increase. On all regular levels (i.e. not bonus or boss) a small percentage of the enemies have guns (regardless of the enemy type). The only exception to this rule are levels where a new enemy is introduced (like 1, 3, 8, etc.).

Bonus rounds (5 and 15) are special levels where enemies move following weird trajectories but don't shoot or attack the player, the goal is to just shoot them all down and get as many points as possible.

Boss battles (10 and 20) are against a boss version of a certain enemy (strafer on 10, diver on 20). The boss is initially huge and takes several hits to explode. When it does explode, it splits into smaller bosses and also gives birth to enemies of the same type with guns.

Arcade Mode is the endless mode that mixes together all the waves and levels of the 20 regular levels of the game and repeats them all over again indefinitely. As an additional challenge (and in order not to make this endless mode actually endless) on every new wave the enemies speed up ever so slightly.

There's also a bonus UFO that appears on every level when the x10 combo is reached. This doesn't attack, it just flies through the screen very quickly and awards a lot of points when hit.

Pigeon Hunter

- Requirements – **Grip and release**
- Encourages – **Strength training through repeated squeezes**

In this activity a squeeze draws the arrow and a release lets it go. The aim is to protect the famous worldwide monuments from the pigeons who fly above and poop on them. Each type of pigeon requires a different number of shots to destroy it. The activity requires repeated squeezes and control of release in time with a flying bird. As soon as the archer and his trajectory are seen, the activity is ready to start.

Level 1	New York: Twelve small grey pigeons – each needs to be struck once
Level 2	Sydney: Nine small grey pigeons
Level 3	Petra: Twenty small grey pigeons
Level 4	Paris: Fifteen small grey pigeons and one small orange pigeon which needs to be struck twice
Level 5	Easter Island: Ten small grey pigeons, one small orange pigeon and one large orange pigeon which needs to be struck three times

Level 6	London: Twenty two pigeons. Twenty small grey, one large orange and a dark grey with yellow head in a box – this one needs four strikes
Level 7	Giza: Twenty two pigeons. Twenty small grey, one large orange and a dark grey with yellow head in a box – this one needs four strikes
Level 8	Rome: Twelve pigeons. Ten small grey and two dark greys with yellow head
Level 9	Singapore: Twenty six pigeons. Twenty three small grey, two dark greys with yellow heads and one large metallic grey – this one needs five strikes
Level 10	Moon: Twenty pigeons. Eighteen small grey and two large metallic grey

Pixelate

- Requirements – **Grip and release**
- Encourages – **Grip or release of grip with minimal cognitive requirements and high reward**

This activity aims to encourage grip and release. The user can choose whether the therapeutic emphasis is on grip or release. The release option is specifically intended for people with high tone. Each full grip or each full release (depending upon which is chosen) will reveal a picture. The percentage of grip/release achieved is displayed in the top right-hand corner alongside a bar which fills, to encourage the full movement. If there is a delay in user movement, the screen will prompt the user to continue.

Level 1	7 pictures. Iconic places around the world
Level 2	10 pictures. Nature scenes
Level 3	12 pictures. Animals
Level 4	15 pictures. Plants
Level 5	17 pictures. Animals
Level 6	20 pictures. Monuments
Level 7	22 pictures. Animals
Level 8	25 pictures. Food - savoury
Level 9	27 pictures. Landscapes
Level 10	30 pictures. Food - sweet

To work through all the levels takes 185 grip and releases plus extras to move from one level to another.

Plume

- Requirements – **Wrist flexion / extension**
- Encourages – **Controlled wrist flexion and extension**

In this activity, the user is controlling the bird as it flies along a course using wrist flexion to move downwards and wrist extension to move upwards. High level of visual perception and concentration required. The time taken increases as the user works through the levels.

Level 1	Number of feathers to collect: 4
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Level 2	Number of feathers: 5
Level 3	Number of feathers: 9
Level 4	Number of feathers: 10 with the addition of hazards to avoid
Level 5	Number of feathers: 16
Level 6	Number of feathers: 14 with increased hazards
Level 7	Number of feathers: 18
Level 8	Number of feathers: 23
Level 9	Number of feathers 28
Level 10	Number of feathers 33

Puffer Fish

- Requirements – **Wrist radial and ulnar deviation, Optional grip and release**
- Encourages – **Controlled wrist radial and ulnar deviation. Combined use of movement and power**

In this activity the user is controlling the fish to move up and down the screen by moving GripAble through wrist radial and ulnar deviation. The fish needs to catch the bubbles. In Level 3 onwards, hazards appear which need to be avoided or by squeezing, they can be blown away. Note that the fish will not be affected by swimming over the sandy area at the base of the screen.

There are ten levels which gradually increase in complexity.

Level I	Time of activity: 22 seconds. Number of bubbles: 18. Erratic movement through range
Level II	Time of activity: 34 seconds. Number of bubbles: 25. Smooth movement through range
Level III	Time of activity: 30 seconds. Number of bubbles: 15. Hazards to avoid falling through the water which can be blown away by the fish by squeezing.
Level IV	Time of activity: 38 seconds. Number of bubbles: 18. Hazards to avoid or blow away.
Level V	Time of activity: 38 seconds. Number of bubbles: 19. Hazards to avoid or blow away.
Level VI	Time of activity: 42 seconds. Number of bubbles: 23. Hazards to avoid or blow away.
Level VII	Time of activity: 45 seconds. Number of bubbles: 25. Hazards to avoid or blow away.
Level VIII	Time of activity: 54 seconds. Number of bubbles: 25. Hazards to avoid or blow away.
Level IX	Time of activity: 50 seconds. Number of bubbles: 28. New hazard of fishing lines to avoid.
Level X	Time of activity: 55 seconds. Number of bubbles: 23. Combination of hazards

Rep Counter

- Requirements – **Can be used independently with grip/release and all three movements, pronation/supination, extension/flexion and ulnar/radial deviation**
- Encourages – **End to end use of the selected movement without gamification**

This is a non-gamified activity which counts all the movements made. Enter the activity and choose:

- ✓ Grip/Release
- ✓ Pronation/supination
- ✓ Radial/ulnar deviation
- ✓ Extension/flexion

Then select the number of repetitions desired. Choose whether sound is wanted or not. This can be changed mid-activity. When the desired repetitions have been achieved, the activity will stop. “Restart” will enable additional repetitions in this movement. Should a different movement be required, exit activity and re-enter from the activity carousel.

Space Shooter

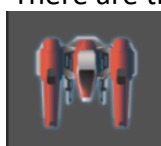
- Requirements – **Pronation and supination, Grip and release**
- Encourages – Full range of movement with speed and control. Also combined with grip and release

In this activity the user needs to move through pronation and supination to navigate left to right across the screen. The aim is to collect the coins in the spaceship as they fall from the sky while avoiding the bullets. Grip propels your spaceship up the screen and release to go down. This game requires high levels of concentration and co-ordination of movement and grip.

Activity guidelines

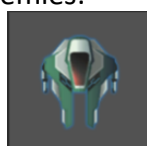
- ✓ The user has three lives per level
- ✓ Firing is always automatic
- ✓ After being hit, there is a short period during which the player cannot receive damage
- ✓ Picking up a coin always gives 500 points
- ✓ Time for each level is approximate as when the enemies stop appearing, the level will wait to see if there are any coins left to fall before ending

- ✓ There are three types of enemies:



A

= 15 points
The bullets will go towards the last recorded position of the user



B

= 10 points
Scatters red round bombs



C

= 10 points
Bullets go directly downwards

- ✓ Each enemy can fire its associated bullet type with a certain probability – this increases in complexity as the Levels increase



= Will set the firing to normal firing type



= Will set the firing to laser type

Level 1	Coins. 0 waves of enemies. Activity length 30 seconds
Level 2	Coins. 7 waves of enemies. Activity length 35 seconds
Level 3	Coins. 8 waves of enemies. Activity length 40 seconds
Level 4	Coins. 11 waves of enemies. Activity length 45 seconds
Level 5	No coins. 13 waves of enemies. Activity length 45 seconds
Level 6	No coins. 13 waves of enemies. Activity length 55 seconds
Level 7	Coins. 12 waves of enemies. Activity length 60 seconds
Level 8	Coins. 19 waves of enemies. Both firing types. Activity length 65 seconds
Level 9	No coins. 29 waves of enemies. Both firing types. Activity length 70 seconds
Level 10	No coins. 31 waves of enemies. Both firing types. Activity length 75 seconds

