

Virus

Overview



Art of learning

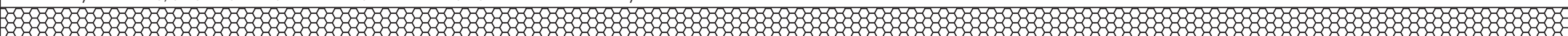
THEME
15



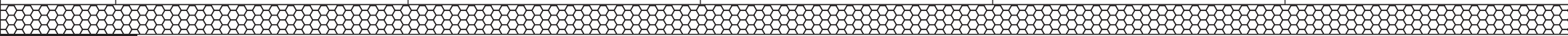
OVERVIEW OF THEME 15

GOALS	Get increased knowledge about how lungs function, how viruses work, how they affect the body, and how the body, through the immune system and vaccination, is protecting the body from the effects of viruses. Understand how the different agents in the body move and react to each other, through play, physical movement and dance. Viruses and the immune system are modelled using the students' own bodies, using a choice of materials (possibly air dry clay/plasticine (Session 4) and figures in drawing). In the warm-up, a repertoire of dance to music from Sami, Roma, Hungarian and children's culture is explored and performed, and the students get to experiment with pulse, rhythm, tempo, dynamics and form in dance.
SUMMARY	The Virus Theme is a double theme. Theme 15 is the first part. The first six sessions focus on the three agents in the body's fight against a virus threat: the lungs (breathing factory), the viruses and the immune system. The last six sessions (Theme 16) are more flexible than the other themes. These are used to deepen the understanding of the relationship of the three agents and end in a physical representation of the dynamics between the three, where the whole system is in play simultaneously, formed as a game/roleplay/dance.

GENERAL GUIDANCE ON THEME 15: The students have first-hand knowledge, experience and interest in the Coronavirus and this is laid out so that each session starts with them having an opportunity to share their own knowledge. Students are likely to know different things about the theme and they are able to share with each other and learn from each other along the way with adults contributing additional information to fill any gaps. This theme represents a war/battle inside the body. This can provide opportunities for linking this to other wars and this link can be used if needed and/or desired. The warm-up uses dance as the medium where students can dance/move freely to the music. One element of structure is added to each song, and this is primarily to create a sense of community in the dance. Improvise and experiment with these elements with the students. Theme 15 is followed by Theme 16, that continues the work on this virus-content in a more flexible way.



THEME 15	DAY 1	DAY 2	TEACHER LED DAY 3-4	DAY 5	DAY 6
Content Summary	<p>Warm-up: Musical dance medley, song no. 1, 2 and 4.</p> <p>Main activity: How we breathe. Collect everything the students already know about breathing on large sheets of paper. Share a common mind map. Fill in the gaps of their knowledge.</p> <p>Reflection: Remembering individually in air-dry clay/plasticine and hand-warming clap in a circle.</p>	<p>Warm-up: Musical dance medley, song no. 1, 4 and 5.</p> <p>Main activity: The breathing factory at work. Using movements from warm-up and inspiration from video clips, the students use their bodies to become breathing factories.</p> <p>Reflection: Conversation about remembering using alternative methods/materials and hand-warming clap in a circle.</p>	<p>Warm-up: Musical dance medley, song no. 1, 2 or 3, then 5 and 6.</p> <p>Main activity session 3 (Mirroring session 1): The Coronavirus. Collect everything the students already know about the Coronavirus. Fill in the gaps.</p> <p>Main activities session 4: See suggestions for activities.</p> <p>Reflection: Session 3: remembering individually using plasticine and hand-warming clap in a circle.</p>	<p>Warm-up: Musical dance medley, song of choice, then 6 and 7.</p> <p>Main activity: Present the Coronavirus to the artist. Play 'Virus and immune system' game. Explain the immune system briefly.</p> <p>Reflection: Remembering individually using plasticine and hand-warming clap in a circle.</p>	<p>Warm-up: Outside musical dance medley, song of choice, then 6 and 7.</p> <p>Main activity: Immune system PhysEd game – played outside.</p> <p>Reflection: Statements yes/no in the outdoors and hand-warming clap in a circle.</p>
Space	Open space (and classroom space).	Open space (and classroom space).	Open space (and classroom space).	Open space (and classroom space).	Outdoor open space/playfield. Or gymnastics hall.



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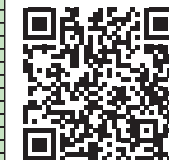
Virus



Overview



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THEME 15	DAY 1	DAY 2	TEACHER LED DAY 3-4	DAY 5	DAY 6 
Materials <ul style="list-style-type: none"> • Speakers (preferably large) and a device to play musical playlist from. • Big sheets of paper (from paper roll). • Felt pens, drawing pencils for each group, and later for each student. • Whiteboard with writing materials. • A lump of plasticine for each student. • A3 sheets of paper (1 per person). 	<ul style="list-style-type: none"> • Speakers and a device to play musical playlist from. • A4 sheets of paper (for those who want) • Felt pens, pencils. 	<ul style="list-style-type: none"> • Speakers and a device to play musical playlist from. • Big sheets of paper (from paper roll). • Felt pens, drawing pencils for each group. • The same A3 sheets of paper (1 per person) as in session 1. Felt pens, pencils for each student. A lump of plasticine for each student. • For session 4: See activity ideas 	<ul style="list-style-type: none"> • Speakers and a device to play musical playlist from. • Plasticine, paper and pencils, crayons. • The same A3 sheets of paper (1 per person) as previous sessions. • Felt pens, pencils for each student. • Template with roles for 'Virus and immune system' game (resource bank). • Extra blank notes to fill in roles for variations of the game. 	<ul style="list-style-type: none"> • Speakers to play music outside, and a device to play musical playlist from. • 2 or more soft balls. • Foam noodles or t-shirts or 'team' vests. • Cones/chalk or any other means needed to mark the boundaries of the playfield and the centre of the game area. 	
Preparations in advance <ul style="list-style-type: none"> • Prepare a playlist and listen to it as preparation. • Read about how the lungs/breathing factory works (resource bank) and understand it. Prepare how to explain it. 	<p>Prepare a playlist and listen to it as preparation.</p>	<ul style="list-style-type: none"> • Prepare a playlist and listen to it as preparation. • Session 3: Read about the Coronavirus (resource bank) and understand it. Prepare how to explain it. • Prepare models/print out photos of different types of viruses to use as inspiration. 	<p>Read about the immune system (resource bank) and understand it. Prepare how to explain it.</p>	<ul style="list-style-type: none"> • Read the game rules in detail, and make sure you understand them. • Prepare creative introduction of the different immune system 'characters': Granulocytes, Nose hair, Dendritic cells, Natural soldier cells, Macrophages and vaccines (resource bank). • Prepare possible yes/no-statements for reflection. • (Note: Make statements where both response options (yes & no) are in balance). 	
WARNINGS					
 preparations					

NOTES

Virus

Session 1

TIME

90 min.
including
break



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WARM-UP: MUSICAL DANCE MEDLEY, SONG NO. 1, 2 AND 4

This will happen:	The whole group moves to the music, different movements to the different types of music, ending with the Breathing song.
Materials needed:	Speakers and a device to play musical playlist from.
Preparations in advance:	Prepare a playlist, and listen to it as preparation.
Preparations in the space:	Connect speakers and devices and check it all works.
The space looks like this:	Open space.

GUIDANCE:

1. Everyone is spread out in the space, with space to move to the music.
2. Put on the playlist, song no. 1, 2 as intro, and last and most important no. 4. Let everyone move according to the music, in their own way, but add one instruction per song, as suggested below.
Warm-up 1: Kiskalász zenekar - Hepehupa Bartos Erika (gyerekdal): Play with folk dance movements, ending very quietly.
Warm-up 2: Marja Mortensson – Mehkanihks saernieh – Technical News: Pretend to be feathers, moving around in the wind according to the music.
Warm-up 4: Breathing song: Tord Gustavsen Trio – At home: Start from laying down on the floor and focus on breathing, breathing air in and out, maybe closing your eyes. Suggestions: invitation to place a hand on the belly, a hand on the chest. Give some prompts for the students to discover on their own, for instance: discover where their breath travels in their body. Where does the air enter from? Try to hold their breath. For how long can they hold their breath? How does it feel when they cannot hold it anymore? Why?
3. Move directly into the main activity from warm-up.

REFLECTION: REMEMBERING INDIVIDUAL CHOICE AND HAND-WARMING CLAP

This will happen:	Individual choice to remember today's session and hand-warming clap.
Materials needed:	Air dry clay, plasticine, paper and pencils, crayons (other materials, if any).
Preparations in advance:	
Preparations in the space:	
The space looks like this:	Open space (and classroom).

GUIDANCE:

1. The students close their eyes and imagine that their lungs are in a real factory and breathing factory. What does it look like? What's inside the factory? How does the factory work?
2. Hand out the paper, pencils, crayons and air dry clay/plasticine to each student.
3. Ask everyone to open their eyes and to create something from the breathing factory on the paper or in air dry clay/plasticine to reflect what they had imagined in their heads.
4. Students write their names on the work. Display the pictures together or on a shelf and keep them for a later reflection.
5. Stand in a circle and do a quick round of the hand-warming clap to finish.
Hand-warming clap: Everyone stands in a circle, following the leader. Palms together, rubbing them back and forth to create heat in the hands. Hold the hands up, down, side to side (as they like), and end by separating the hands and after a moment: Clap the hands together. If everyone claps at the same time – perfect, if not, try once more.

MAIN ACTIVITY: HOW WE BREATHE

This will happen:	Collect everything the students already know about breathing. Fill in the gaps.
Materials needed:	Big sheets of paper (from paper roll). Felt pens, drawing pencils for each group.
Preparations in advance:	Read about how the lungs/breathing factory works (resource bank) and understand it. Prepare how to explain it.
Preparations in the space:	
The space looks like this:	Open space (and classroom space).

GUIDANCE:

1. In groups, on big sheets of paper, write down and draw everything they know about breathing. Think back to the warm-up, laying on the floor. What do they know? What do they wonder about?
2. Ask each group to share, and collect the information from all groups on the blackboard or similar, making a huge mind map.
3. Fill in the gaps of the things the students still don't know. Explain in short how the actual lung cell breathing factory works in the body (see info sheet in resource bank).

Virus

Session 1

TIME

90 min.
including
break



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NOTES

Virus

Session 2

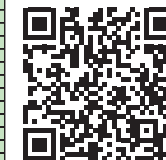
TIME

90 min.
including
break



Art of learning

THEME
15



WARM-UP: MUSICAL DANCE MEDLEY, SONG NO. 1, 4 AND 5

This will happen:	The whole group moves to the music, different movements to the different types of music, ending with the Breathing factory song.
Materials needed:	Speakers and a device to play musical playlist from.
Preparations in advance:	Prepare a playlist, and listen to it as preparation.
Preparations in the space:	Connect speakers and devices and check it all works.
The space looks like this:	Open space.

GUIDANCE:

1. The students spread out throughout the room, with room to move to the music.
2. Put on the playlist, song no. 1 as intro, 4 and 5 as most important. Let everyone move according to the music, in their own way, but add one instruction per song, as suggested underneath.
Warm-up 1: Kiskalász zenekar - Hepehupa Bartos Erika (gyerekdal): Play with folk dance movements, ending very quietly.
Warm-up 4: Breathing song: Tord Gustavsen Trio – At home: Start from laying down on the floor (this time: On the belly, or in a foetal position?) and focus on breathing, breathing air in and out, maybe closing their eyes. Suggestions: How is their breath different when on their belly/in foetal position? Discover where their breath travels in their body. Where does the air enter from? Try to hold their breath. For how long can they hold their breath? How does it feel when they cannot hold it anymore? Why?
Warm-up 5: Breathing factory song: Wintergatan – Marble Machine: Day 2: Pretend to be machines. In the second half: Create 3 factory movements they can repeat, remembering them for the main activity.
3. Move directly into the main activity from warm-up.

REFLECTION: REMEMBERING INDIVIDUALLY, METHOD OF CHOICE AND HAND-WARMING CLAP

This will happen:	Individual drawing to remember today's session. Hand-warming clap in circle.
Materials needed:	A4 sheets of paper, felt pens, pencils.
Preparations in advance:	
Preparations in the space:	
The space looks like this:	Open space (and classroom space).

GUIDANCE:

1. Explain that the work everyone has done today in the session will become useful later. Ask them how they think they can best remember what they've done today? Let the students come up with suggestions.
2. Give choices based on the suggestions, possibilities might include a) sitting and remembering the factory in their heads (find their own private space/lay down on the floor), b) repeating the movements using their bodies (individually) or b) to draw or write down the movements.
3. Give time for everyone to work on remembering the work they did in the session today.
4. Stand in a circle: Do a quick hand-warming clap in the circle to finish. Thank everyone for their contributions today.

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Session 2

TIME

90 min.
including
break



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MAIN ACTIVITY: THE BREATHING FACTORY AT WORK – BECOMING FACTORIES

This will happen: Using movements from the warm-up and inspiration from video clips to become breathing factories, using their bodies.

Materials needed: Speakers and a device to play musical playlist from.

Preparations in advance:

Preparations in the space:

The space looks like this: Open space.

GUIDANCE:

1. Show an example of the task.
2. In threes, agree on who is to start as No 1, 2 and 3. No 1 starts by sharing their machine movements from their warm-up, one movement at a time. No 2 repeats No 1's movement but makes it bigger. No 3 repeats again but makes the movement even bigger. Finally, No. 1, 2 and 3 do the biggest version of the movement again. (This whole step should progress quickly, to move from No 1 to No 2 should take no more than 3 seconds). After No 1 has shared their 3 movements, the roles within the group are swapped, so that everyone gets to be No 1, 2 and 3.
3. In the same groups, choose some of the movements from their group. How can they connect the different movements together? Keep experimenting with their movements and with combinations of bigger and smaller movements.
4. Gather everyone. Show the video clips from factory production lines, airport luggage transport from above, traffic systems (list of video clips in resource file).
5. In larger groups, create the breathing factory, using their movements and the film clips as inspiration. How does the factory work? How do they change O₂ into CO₂? How can they manage to have the production line rolling continuously without stopping? Can they use some of the factory elements from the warm-up? Work with and without the Breathing factory song in the background (Use different tempos of the song: Maybe the factory is very slow and old, or very modern and fast?)
6. Everyone presents: Show each other the different lung breathing factories. Discuss: What can they learn from this group's factory? Which factory is most similar to the reality in their bodies and why? When did the production line manage to go continuously without stopping?

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Session 3-4

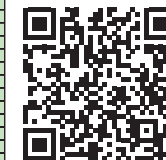
TIME

90 min.
including
break



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WARM-UP: MUSICAL DANCE MEDLEY, SONG NO. 1, 2 OR 3, THEN 5 AND 6

This will happen:	The whole group moves to the music, different movements to the different types of music, ending with the Coronavirus song.
Materials needed:	Speakers and a device to play musical playlist from.
Preparations in advance:	Prepare a playlist, and listen to it as preparation.
Preparations in the space:	Connect speakers and devices and check it all works.
The space looks like this:	Open space.

GUIDANCE:

1. The students spread out throughout the room, with room to move to the music.
2. Put on the playlist, song no. 1, 2 or 3 as intro, 5 and 6 as most important. Let everyone move according to the music, in their own way, but add one instruction per song, as suggested underneath.
Warm-up 1: Kiskalász zenekar - Hepeshupa Bartos Erika (gyerekdal): Play with folk dance movements, ending very quietly.
Warm-up 2: Marja Mortensson – Mehkanihks saernieh – Technical News: Pretend to be feathers, moving around in the wind according to the music.
Warm-up 3: Josefine og Oskar, MGPjr: Smitte deg med glede: In groups: Choose a few movements to dance as choreography in the refrain (just for fun).
Warm-up 5: Breathing factory song: Wintergatan – Marble Machine: Play with the elements from the factory making day. Individually or together with someone (self organised).
Warm-up 6: The Coronavirus song: L'Orchestre de Contrebasses – Bass, bass, bass, bass, bass and bass. Pretend to be a spy, sneaking and hiding from the police. Move silently, fast and slow, on the alert. Play with the movements.
3. Move directly into the main activity from warm-up.

REFLECTION: REMEMBERING INDIVIDUALLY AND HAND-WARMING CLAP

This will happen:	Individual drawing to remember today's session. Hand-warming clap in circle.
Materials needed:	A3 sheets of paper (1 per person). Felt pens, pencils for each student.
Preparations in advance:	
Preparations in the space:	
The space looks like this:	Open space (and classroom space).

GUIDANCE:

Session 3:

1. Hand out the A3 sheet of paper from Session 1 to each student. They will now work on their own, drawing to remember today's session.
2. Ask everyone to insert the virus and the way it affects the body into their drawing – draw it the way they are picturing it in their head.
3. Collect the drawings from everyone, and save them for reflection in the other sessions.

Session 4:

1. Explain that the work everyone has done in Session 3 and 4 is important for the artist too. Give everyone the task to choose one thing, something they find important, that they would like to share with the artist when returning for Session 5.
2. Give time for everyone to work on the thing they would like to share, and how they would share it. Give everyone a choice in how they would like to share it with the artist.

Both sessions, in the end:

Stand in a circle: Do a quick hand-warming clap in the circle to finish. Thank everyone for their contributions today.

Hand-warming clap: Everyone stands in a circle, following the leader. Palms together, rubbing them back and forth to create heat in the hands. Hold the hands up, down, side to side (as you like), and end by separating the hands and after a moment: Clap the hands together. If everyone claps at the same time – perfect... if not, try once more.

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Session 3-4

TIME

90 min.
including
break



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MAIN ACTIVITY: THE CORONAVIRUS

This will happen:	Collect everything the students already know about the Coronavirus. Fill in the gaps.
Materials needed:	Big sheets of paper (from paper roll). Felt pens, drawing pencils for each group.
Preparations in advance:	Read about the Coronavirus (resource bank) and understand it. Prepare how to explain it. Prepare models/print out photos of different types of viruses to use as inspiration.
Preparations in the space:	
The space looks like this:	Open space (and classroom space).

GUIDANCE:

Session 3:

1. In groups, on big sheets of paper, write down and draw everything they know about the Coronavirus (give prompts if needed). Ask them to think back to the warm-up, acting like spies. What do they know? What do they wonder about?
2. Ask each group to share and collect the information from all groups on the blackboard or similar, making a huge mind map.
3. Fill in the gaps of the things the students still don't know. Explain in short how the actual Coronavirus is working inside the body (see info sheet in resource bank).

Session 4: Ideas

- Create your own viruses using air dry clay/plasticine/play dough (can be different sorts of viruses, not just replicas of the Coronavirus). Bring actual models/photos of different viruses as inspiration.
- Visit the library and find books about the lungs/viruses, or other diseases.
- Repeat the factories made with their bodies in Session 2, adding the virus into the factory. How can you show the virus affecting the factory? How does the virus make the factory break down? Work in groups and show each other their different versions.
- Prepare a presentation about the Coronavirus for the artist when returning in Session 5, either by explaining it from drawings, lecture, presenting the movement piece on the virus affecting the body, or in another way. Let the students choose methods and approaches.

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Virus

Session 5

TIME

90 min.
including
break



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WARM-UP: MUSICAL DANCE MEDLEY, SONG OF CHOICE, THEN 6 AND 7

This will happen:	The whole group moves to the music, different movements to the different types of music, ending with the Immune system song.
Materials needed:	Speakers and a device to play musical playlist from.
Preparations in advance:	Prepare a playlist, and listen to it as preparation.
Preparations in the space:	Connect speakers and devices and check it all works.
The space looks like this:	Open space.

GUIDANCE:

1. The students spread out throughout the room, with room to move to the music.
2. Put on the playlist, song of choice as intro, 6 and 7 as most important. Let everyone move according to the music, in their own way, but add one instruction per song, as suggested below.
Warm-up 6: The Coronavirus song: L'Orchestre de Contrebasses – Bass, bass, bass, bass, bass & bass. Pretend to be a spy, sneaking and hiding from the police. Move silently, fast and slow, on the alert. Play with the movements.
Warm-up 7: The Immune system song: Prokofjev – *Romeo and Juliet*, Op. 64, Act 1, scene 2: Dance of the Knights. Be military. First experiment on their own. Then use a military command voice to make everyone walk in lines, stop, go (and opposites).
3. Move directly into the main activity from warm-up.

REFLECTION: REMEMBERING INDIVIDUALLY AND HAND-WARMING FLAP

This will happen:	Individual choice to remember today's session and hand-warming clap in a circle.
Materials needed:	Air-dry clay, plasticine, paper and pencils, crayons etc.
Preparations in advance:	
Preparations in the space:	
The space looks like this:	Open space (and classroom).

GUIDANCE:

1. The students close their eyes and imagine how the immune system works to protect the body and the breathing factory from viruses. What does the immune system look like? What's inside the factory? How does the factory work?
2. Hand out the paper, pencils, crayons and air dry clay/plasticine to each student from Sessions 1 & 3. Have more air dry clay/plasticine available if needed.
3. Ask everyone to open their eyes and to create something from the immune system on the paper or in air dry clay/plasticine to reflect what they had imagined in their heads.
4. Students write their names on the work. Display the pictures together or on a shelf and keep them for a later reflection.
5. Stand in a circle and do a quick round of the hand-warming clap to finish.
Hand-warming clap: Everyone stands in a circle, following the leader. Palms together, rubbing them back and forth to create heat in the hands. Hold the hands up, down, side to side (as they like), and end by separating the hands and after a moment: Clap the hands together. If everyone claps at the same time – perfect... if not, try once more

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Virus

Session 5

TIME

90 min.
including
break



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MAIN ACTIVITY: THE IMMUNE SYSTEM INTRODUCED. VIRUS AND IMMUNE SYSTEM – GAME.

This will happen:	Present the Coronavirus (from Session 3-4) to the artist. Play 'virus and immune system' game. Explain the immune system briefly.
Materials needed:	Template with roles for 'virus and immune system' game (resource bank). Extra blank notes to fill in roles for variations of the game.
Preparations in advance:	Read about the immune system (resource bank) and understand it. Prepare how to explain it.
Preparations in the space:	
The space looks like this:	Open space (and classroom space).

GUIDANCE:

1. Present the Coronavirus (from session 3-4) to the artist.

2. Play the game 'virus and immune system' aka 'murder in the darkness'

Rules of the game: All the students pick a note with a role written on it (breathing factory/virus/immune system). The person being the immune system has to announce its role, the others have to keep their roles a secret. Everyone except the immune system (detective) walks around in the space, shaking hands with each other. The immune system is observing, trying to find out who the virus (murderer) is.

The virus squeezes the hand of his/her victims a bit hard, to infect them with the virus.

If they are infected, they have to count to 3 in their head, then cough and show other virus symptoms (ask for ideas of the symptoms from the students!) and then fall down to the floor, sick.

The game continues until either the virus has infected all the breathing factories, or until the immune system has identified who the virus is.

Variations: For these, the immune system (once identified) has to leave the room, and the virus mutates/ the rules are changed. The immune system must identify the system in order to find the virus.

- Counting to 6 before falling down sick (it gets more difficult to follow the source of contamination).
- The virus infects by another method (for example, blinking the eyes, touch on the shoulder, a big smile – get the students to suggest the new methods).
- Those that are infected get to infect one other breathing factory person before they fall down sick.

3. Explain briefly how the immune system works in the body (see info sheet in resource bank), linking it to the game and the warm-up.

NOTES

Virus

Session 6

TIME

90 min.
including
break



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WARM-UP: MUSICAL DANCE MEDLEY, SONG OF CHOICE, THEN 6 AND 7 (OUTSIDE)

This will happen:	The whole group moves to the music, different movements to the different types of music, ending with the Immune system song.
Materials needed:	Speakers to play music outside and a device to play musical playlist from.
Preparations in advance:	
Preparations in the space:	Connect speakers and devices and check it all works.
The space looks like this:	Outdoors open space.

GUIDANCE:

1. The students are scattered throughout the room, with room to move to the music.
 2. Put on the playlist, optional song as intro. Let the students move freely to the music, but add an instruction to each song, as suggested below (or choose something else). Then song 6 and 7.
Song 6: Coronavirus song: L'Orchester de Contrebasses - Bass, bass, bass, bass, bass and bass. Pretend to be a spy sneaking around hiding from the enemy. Move silently, fast or slow, constantly on guard. Play with the movements.
Song 7: Immune system song: Prokofiev – *Romeo and Juliet*, Op. 64, Act 1, scene 2: Dance of the Knights. Pretend they're in the military. First let each student experiment on their own. 2nd half: Supervisor gives military (and with humour) instructions to get everyone to line up, stop, say hello, etc.
- If it is not possible to play the music outdoors, the warm-up can take place either by each person imagining the music in their head, or by inventing another warm-up that can prepare the students for being viruses and immune system.

REFLECTION: YES/NO IN THE OUTDOOR SPACE AND HAND-WARMING CLAP

This will happen:	Students make yes/no claims by standing on the line in the outdoor space. Hand-warming clap in circle.
Materials needed:	Cones/chalk or any other means necessary to mark a line across the field.
Preparations in advance:	Prepare possible yes/no statements (not right and wrong answers).
Preparations in the space:	
The space looks like this:	Open space (and classroom space).

GUIDANCE:

1. Divide the outdoor space into two parts with cones/chalk.
2. Explain: One side is YES, the other side is NO. The adult makes a statement and the students must choose which side they want to stand on depending on what their response to the statement is. Try the principle with a test statement (for example, 'I think apples are the best fruit').
3. Next say some statements which reflect the session. Examples :
 - I liked being a virus more than being part of the immune system.
 - If I were part of the immune system, I'd be a macrophage.
 - In the immune system, I think the Dendritic cells have the most important role.
 - Without a vaccine, I think the virus would have won the fight.
4. After each claim, select a couple of random students and ask why they chose to answer yes or no.
5. Stand in circles and take a quick round of hand-warming claps as a finish.
Remember: Don't use this activity to make statements with right and wrong answers, it is just intended for showing different opinions, all of which are valued.
End with a quick hand-warming clap in the circle to finish. Thank everyone for their contributions today.
Hand-warming clap: Everyone stands in a circle, following the leader. Palms together, rubbing them back and forth to create heat in the hands. Lead the hands up, down, side to side (as they like), and end by separating the hands and after a moment, clap the hands together. If everyone claps at the same time – perfect... if not, try once more. Finish in a good place and thank everyone for today.

NOTES

Virus

Session 6

WARNINGS

! preparations

TIME

90 min.
including
break



Art of learning

THEME
15



MAIN ACTIVITY: IMMUNE SYSTEM PHYSED GAME – PLAYED OUTSIDE !

This will happen:	Play the immune system PhysEd game. Be introduced to the different parts of the immune system along the way.
Materials needed:	2 or more soft balls, foam noodles/t-shirts or yellow vests. Cones/chalk or any other means necessary to mark the outer boundaries of the playfield. Fabric strips that can be used as tails (1 for each student). Cones or lime or other tools needed to highlight the outer edges and centre of the gaming area.
Preparations in advance:	Read the game rules in detail, and make sure to understand them. Prepare creative introduction of the different Immune system 'characters': Granulocytes, Nose hair, Dendritic cells, Natural killer cells, Macrophages and vaccine (resource bank)
Preparations in the space:	Mark the outer ends, and middle of the field.
The space looks like this:	An outdoor open space (playground / football field or similar) or gymnastic hall.

GUIDANCE:

If possible, do this in an outdoor space. Each level of the game is a game in itself and can be played several times in succession. How many of the levels played can also be adjusted as needed, and according to where the best dynamics and commitment occur. When new 'types' in the immune system are introduced, present them in a relevant creative way that makes students remember them. If it is fun, use more props than described.

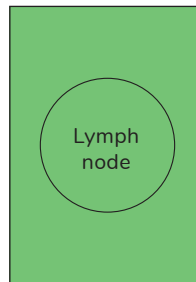
Explain the outdoor playing area, and the goal of the game: that the viruses should fight to get over to the breathing factory to infect the body, and that the Immune system should try to stop the intruders. Each round begins with the immune system (or supervisor) shouting, "Oh no, the body is attacked!" All viruses that are caught become part of the immune system.

Level 1: Granulocytes and nose hair: Present the granulocytes: Important in the immune system because they can remove intruders that enter the body. Select 2 students as granulocytes. They get a soft ball each and sit in the headquarters of the immune system: the Lymph gland. When the round begins with, "Oh no, the body is under attack", all viruses run over towards the breathing factory. The granulocytes can move freely around and throw the ball at viruses. Any viruses hit must sit down on the ground where they are.

Nose hair: Those who are taken by the balls sit on the ground and are now nose hairs. Present nose hair: Nose hair stops viruses from moving forward, like the first line of defence of the immune system. These are given foam noodles/t-shirts/yellow vests, which they can swing around them and try to catch the viruses as they pass by. Any viruses hit by Nose hair do not die, but they have to freeze for three seconds before continuing to run.

Ask after Level 1: Did the immune system manage to look after the body? Was it the immune defences or the viruses that won?

Start for virus
(Outside the body)



Goal for virus:
breathing factory

Level 2: Macrophages: Present the macrophages: Very important in the Immune system. They kill viruses, and they eat them. They both kill and clean up after themselves. Select 2-4 students as macrophages. They can move freely and they bring with them a foam noodle/a t-shirt/vest/tail that they hold in both hands and thus can catch Viruses inside. All viruses that get caught must sit on the ground and are dead.

Ask for level 2: How did their body do? Who won? The immune system or the viruses?

Level 3: Dendritic cells and natural killer cells: Present the dendritic cells: The dendritic cells are important in the immune system, and their job is to reveal/remove the camouflage of the enemies, so that the natural killer cells can recognise them and catch them. Select 2-4 students as dendritic cells. All the viruses now get tails (camouflage), which they attach to their back. The dendritic cells' job is to remove as many tails as possible from the viruses.

Natural killer cells: Present the natural killer cells: The natural killer cells are important in the immune system because they can effectively kill viruses. Select 1-2 students as natural killer cells. These can shout STOP at any time, and anyone without a tail must stop. The killer cells can thus walk slowly and calmly around and take these on the shoulders, and all these viruses die. Those who die will be dendritic cells in the next round.

Ask after Level 3: How did their body do? Who won? The Immune system or the viruses?

Level 4: Vaccine: Present the vaccine: It can strengthen the Immune system and help the defences to cooperate. Select 1-2 people as a vaccine. They can set up a defence consisting of macrophages, dendritic cells, natural killer cells, granulocytes and nose hair (guide helps to select how many and who), placed as they please. The rest of the viruses line up, the vaccine shouts, "The body is under attack. Activate defence!" and the Viruses are try to get over, now with the entire immune system in operation at once.

Perhaps the vaccine recipe needs to be adjusted, and a new formula is tried out before the viruses are eventually stopped (or at least most, so that the body does not get so sick).

NOTES