Listening Lab

Wheel of Sound

Learning tool for attentive and precise listening.

User Guide 27. July 2016

Contents

1 General 1

2 Setting up **Wheel of Sound** 1
- 2.1 **Wheel of Sound** online 1
- 2.2 **Wheel of Sound** App 1

3 Training Log 2
- 3.1 General 2
- 3.2 Bonus Exercises 3

4 Course of Exercise 4
- 4.1 General 4
- 4.2 Task 5
  - 4.2.1 Preview the sounds 5
  - 4.2.2 Distinguish sounds 6
- 4.3 Evaluation exercise 7

5 Sound Library 8
- 5.1 General 8

6 Versions 9

7 Thanks 9

8 Copyright 9

9 Appendix 10
- 9.1 Competency Model 10
- 9.2 Sound Categories 11

1 General

Wheel of Sound is a learning program for the development of listening skills. Its focus lies on the distinction of non-verbal sounds.

Wheel of Sound stimulates abilities and skills essential for everyday life as well as educational learning. Precise listening and the distinction of sounds are trained in a closely targeted way. Simultaneously, it requires a high degree of attention, auditory memory and concentration.

2 Setting up Wheel of Sound

2.1 Wheel of Sound online

The online-version can be used immediately in a modern browser. **Wheel of Sound**'s most efficiant use is with Chrome or Firefox where it has been extensively tested. Simply bookmark your interface, create a shortcut on your desktop, or add the respective start icon on your iPad/Android-Tablet.

After starting **Wheel of Sound**, press F11 (Windows) / ⇧⌘F (Mac) to switch to full screen mode. If you are using an iPad or Android tablet start the software by tapping the icon on the home screen.

Delete the browser history after program updates for new features to be adapted properly.

2.2 Wheel of Sound App

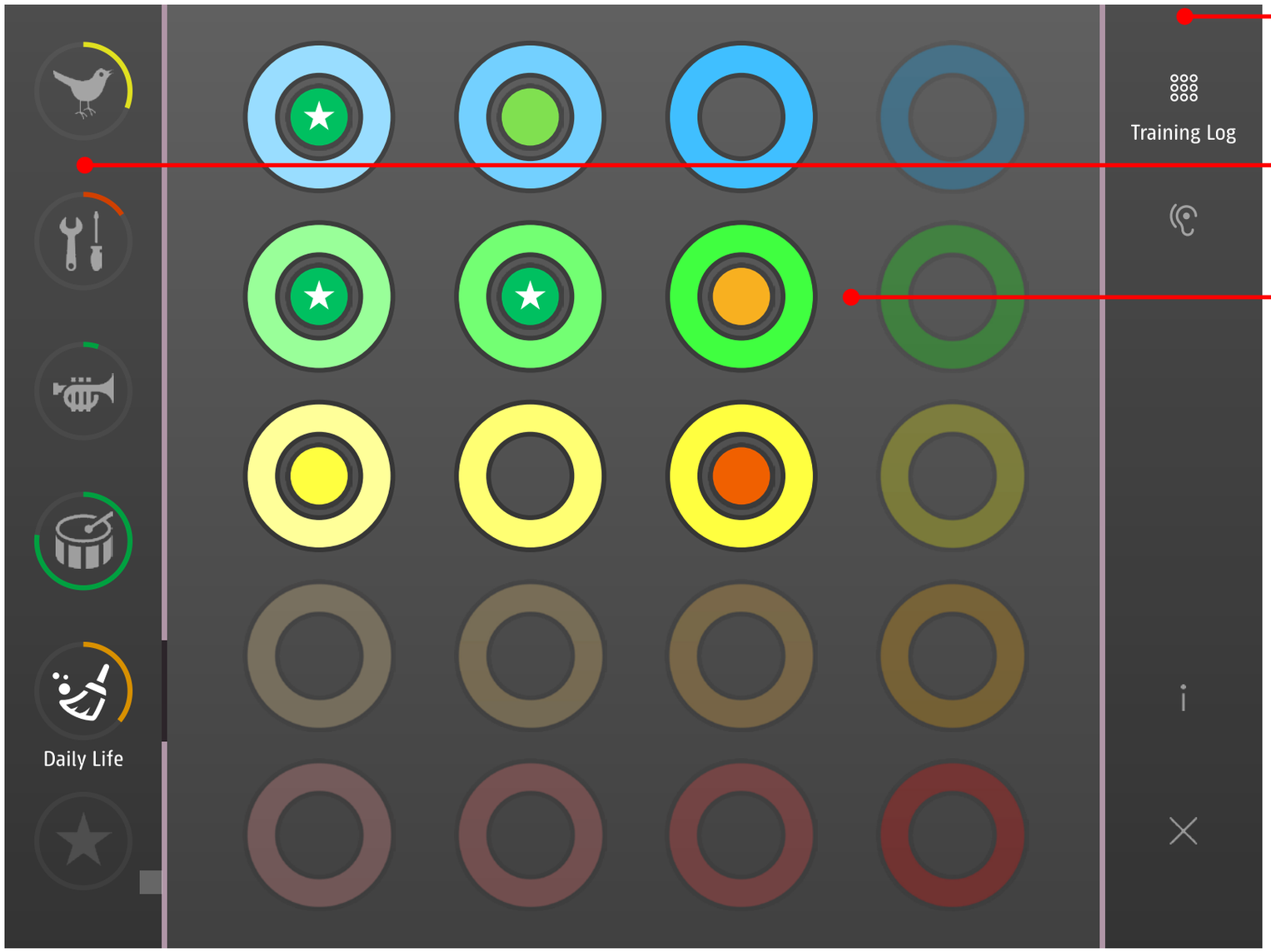
Download the app from the App Store. Tap on **Wheel of Sound** tile to launch the app.

3 Training Log

3.1 General

The training log is the landing page of **Wheel of Sound** where learners select their sound theme, start exercises and continuously receive an overview of their individual working progress and success.

Wheel of Sound's five sound topics cover various areas for listening: Birds, technology, melody, rhythm and everyday life. Every topic includes twenty exercises with continuously increasing complexity.



Preferences and Navigation
To the training log
To the sound library
Instructions (Select a language)

5 Topics
Birds, Technology, Melody, Rhythm, Daily Life

20 exercises
Increasing difficulty from left to right:
sounds become more and more similar.
Requires precise listening and the ability to distinguish.
Increasing difficulty from top to bottom:
more sounds to be identified.
Requires attention, memory and concentration

Light blue: simplest exercise
Red: most difficult exercise
Higher difficulty exercises are unlocked, depending on the results of the exercises that have already been processed.
→ Competency Model

Evaluation exercises

- Perfect
- Very good
- Good
- Not bad
- You can do better
- Try again or choose a more simple exercise.

3.2 Bonus Exercises

If just over half of the exercises are solved well or even perfect, the bonus rider will be unlocked. It includes twenty additional exercises on different topics with a constant high level of difficulty.

Animals	Daily Life	Music	Miscellaneous
Carnivores	Writing	Melody	Fantasy I – High Frequency
Wildcat	Pen	Ringtone	Shimmer
Wolve	Typewriter	Synthetic Bass	Radio signals
Tiger	Computer Keyboard	Clarinet	Very high signals
Pets	Sport & Games	Timbres	Fantasy I – Low Frequency
Cow	Billiards	Harry Potter	Synthesizer
Cat	Ping-Pong	Pirates of the Caribbean	Underwater - Sonar
Dog	Basketball	Skyfall	Roaring monster
Aquatic Animals	Humans I	Chords	BOING! WHAM!
Whale	Baby – Laughing	Arpeggio – Piano	Boing!
Sea Lion	Baby – Talking	Arpeggio – Cimbalom	Signal – Fall off
Frog	Baby – Crying	Arpeggio – Accordion	Breaking glass
Desert, Steppe & Jungle	Humans II	Scales	Squeaking
Elephant	Laughter – Theatre	Piano – Upwards	Metal
Camel	Stadium – Fans	Marimba – Downwards	Toy
Wildebeast	Applause – Cheering	Synthesizer with Echo – Upwards	Tires
Insects & Bats	Humans III	Structureless sound sequences	Tools
Cricket	Coughing	Wind Chime	Hammer
Bat	Sneezing	Organ	Handsaw
Cicada	Snoring	Synthesizer	Power Drill

4 Course of Exercise

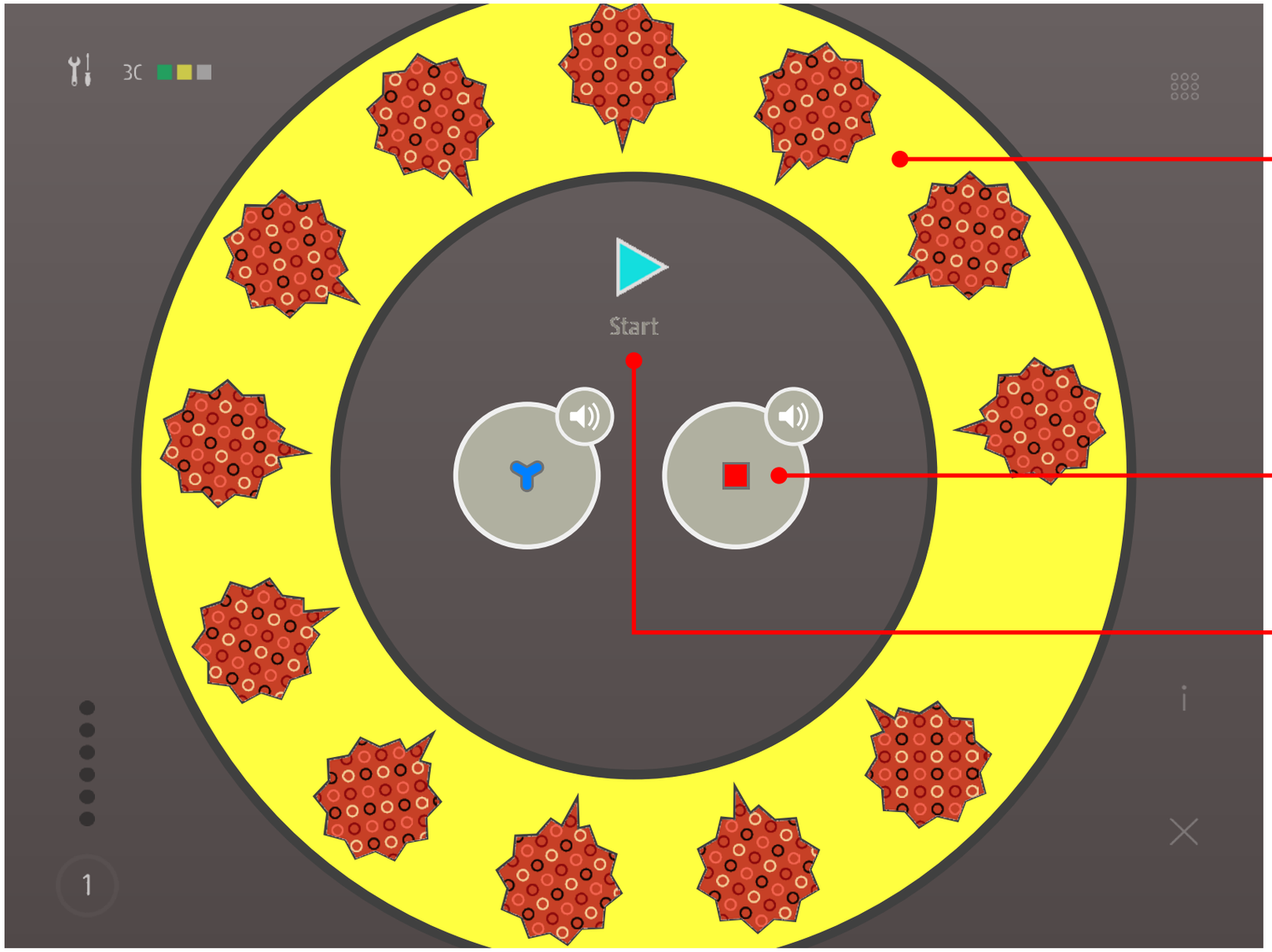
4.1 General

One exercise includes three tasks. Initially, learners listen to one up to three sounds per tasks and will have to memorize them well. The sounds are then played back in sequence with a maximum of three additional sounds and have to be recognized by the learners.

Je mehr Klänge gefragt sind, desto höher sind die Anforderungen an Gedächtnis, Aufmerksamkeit und Konzentration. Steigende Ähnlichkeit der Klänge erfordert zunehmend genaueres Hinhören und bessere Diskriminationsfähigkeit.

4.2 Task

4.2.1 Preview the sounds

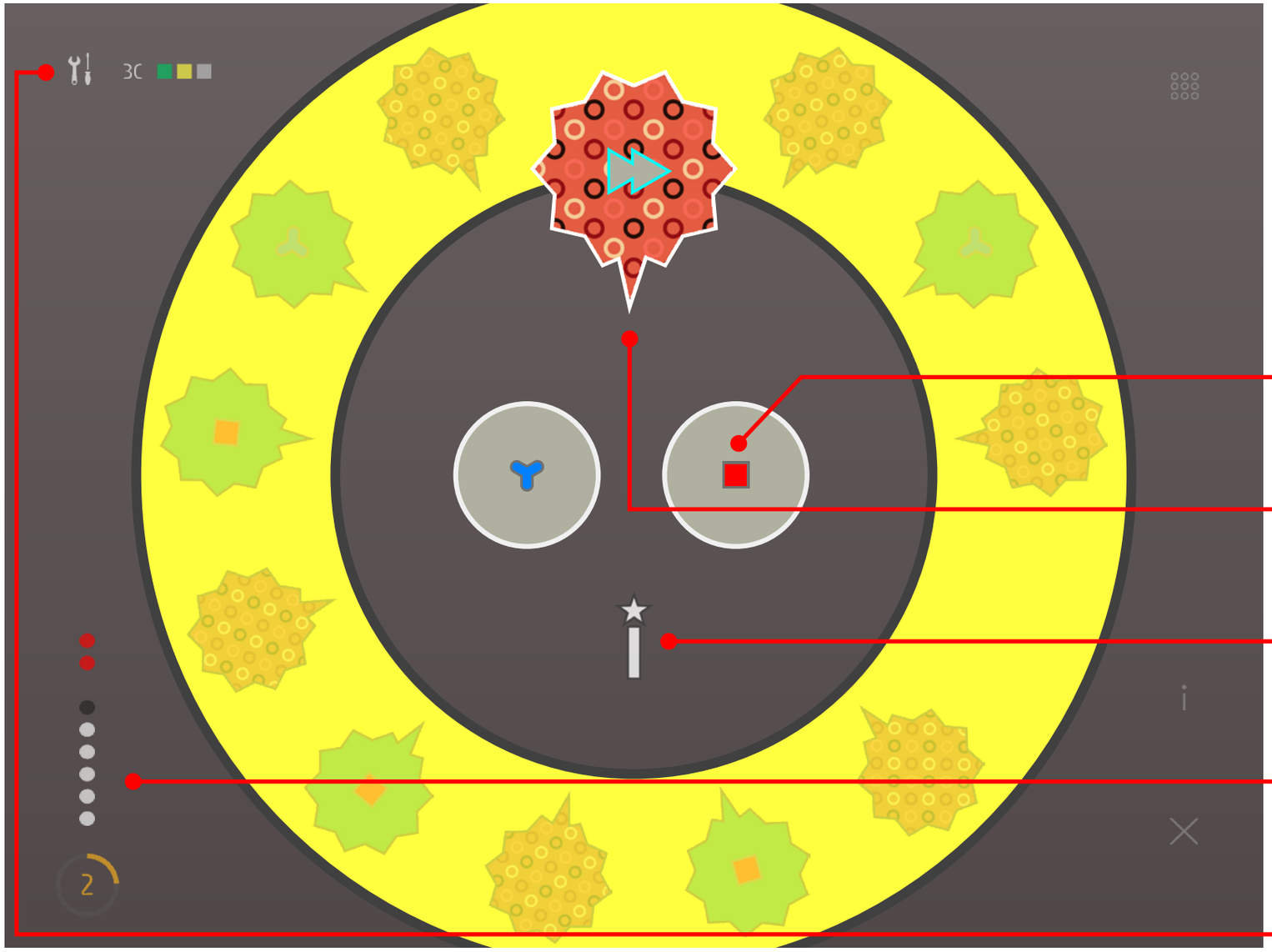


All sounds
Behind the speech bubbles there is a maximum of five hidden sounds.

Wanted Sounds
At the beginning the wanted sounds are played. They can be heard any number of times before starting the task.
Depending on the difficulty level of the exercise, one up to three sounds are wanted.

Tap or click on the arrow button to *start* the task.

4.2.2 Distinguish sounds



The wheel turns and the sounds are reproduced.

A ***wanted sound*** is reproduced.
Tap or click on the matching circle in the middle of the wheel.

A ***sound not wanted*** is reproduced.
Tap or click on the double arrow to pass quickly to the next bubble.

Tap or click on the ***magic wand*** to interrupt the task. The wanted sounds can be heard again. Depending on the difficulty level of the exercise, magic wand can be used once or twice per task.

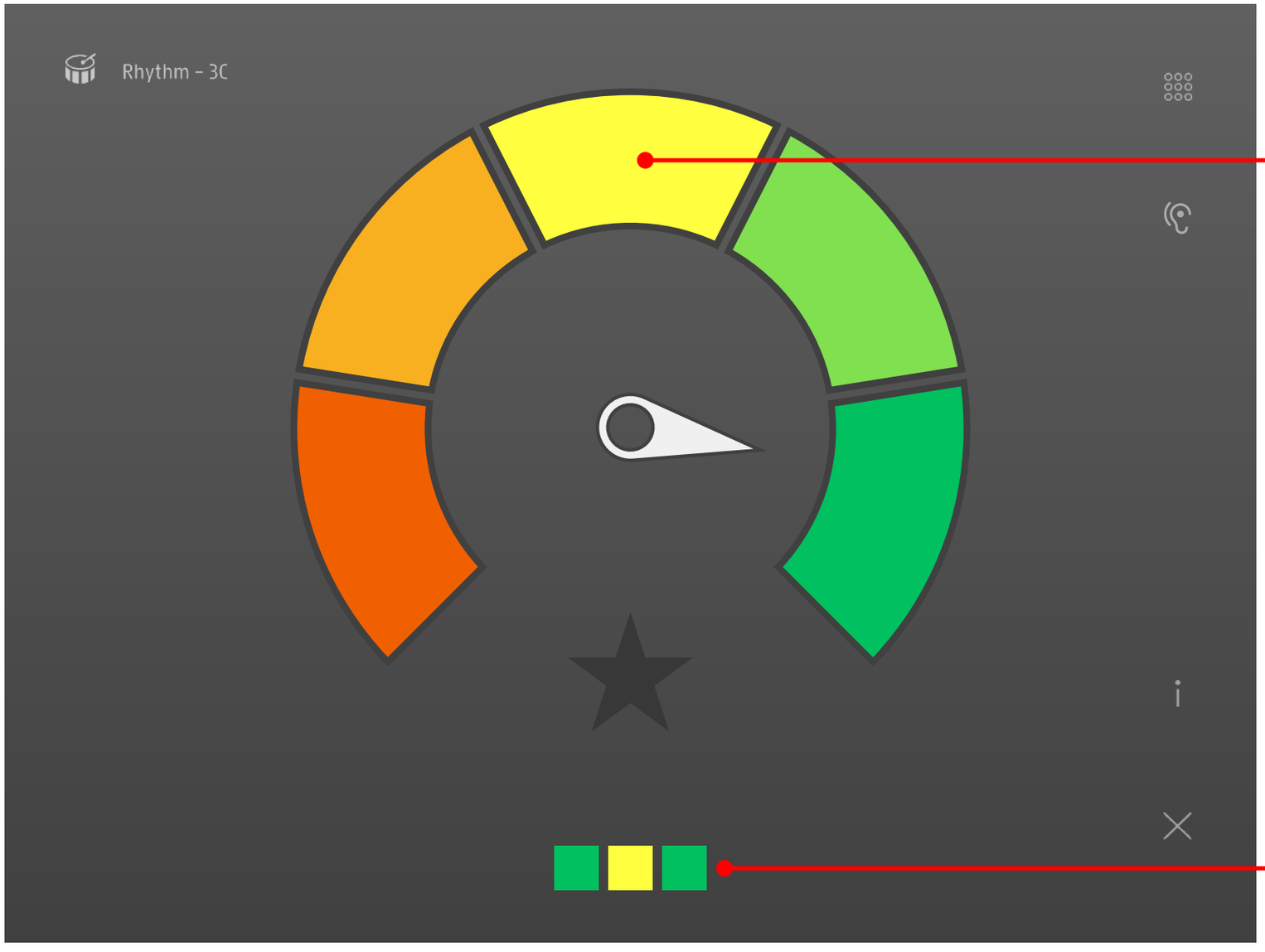
Working progress task
Wanted sounds: 6 | Recognized sounds: 5 | Errors: 2 | Round 2

Exercise orientations | Rating tasks
Technology topic, exercise 3C
Rating task 1: very good | Rating task 2: not bad
Task 3 is currently in progress.

4.3 Evaluation exercise

At the end of each exercise the performance is evaluated. These ratings will then be listed in the exercise overview. This overview and landing page serves as a training log, that continuously captures the individual working progress and success of the learners.

The final evaluation displays the rating of the single tasks and the evaluation of the entire exercise.



Rating exercise
This display shows the rating of the exercise just completed. «Perfect» means: No mistakes and just one turn of the wheel per task. You are rewarded with a star.

- Perfect
- Very good
- Good
- Not bad
- You can do better
- Try again or choose a more simple exercise.

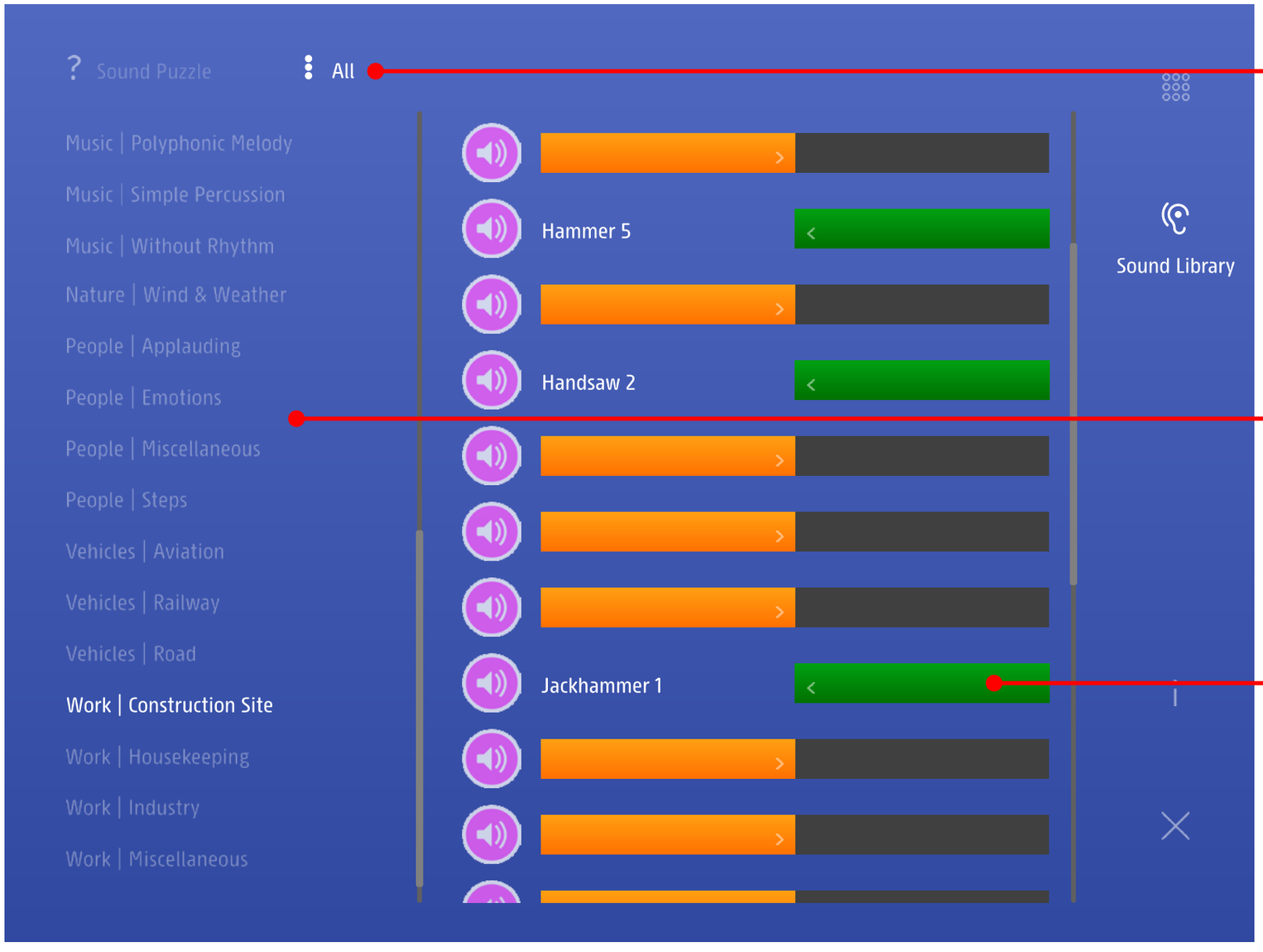
The rating will then be listed in the traininig log. It appears as a colored circle (with star) in the exercise wheel.

Evaluation tasks
The colored bars show how well the single tasks have been solved.

5 Sound Library

5.1 General

The sound library contains all sounds of the learning program, sorted by sound category, ready for listening and gives learners the opportunity to rummage in sounds and puzzle over what they hear.



Sound Puzzle / All / Last Exercise
All / Last Exercise displays all the sounds or the sounds of the exercise in progress.

Sound Puzzle
Listen to ten randomly chosen sounds and puzzle about what you hear.

Sound Categories
Tap or click on a certain categorie|subcategorie to display all sounds of this categorie.

Navigate the sounds
Tap or click on the speaker to hear the sound.
Tap or click on the bar to open the sound drawer and to display the name of the sound.

6 Versions

Wheel of Sound is available as iOs application or as an online version.

	App version	Online version
License	Perpetual license	Annual license
Use	Local	Via internet

7 Thanks

The development work is professionally supported by the Center for Orality Studies – University of Teacher Education Zug (PH Zug). A beta version of **Wheel of Sound** has been successfully tested in autumn 2015 by several middle school classes at PH Zug.

Bird calls with kind permission of Prof. Dr. Hans-Heiner Bergmann.

8 Copyright

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9 Appendix

9.1 Competency Model

Difficulty settings: attention, memory and concentration.

	Sounds per task	Number of different sounds	Number of searched sounds	Magic Wand | Break	Rating: yellow | orange | red
A	9	3	1	1 | 2	1 | 3 | 5 errors
B	10	4	2	2 | 2	1 | 3 | 5
C	12	5	2	1 | 2	2 | 4 | 6
D	12	5	3	2 | 2	2 |5 | 7
E	12	5	3	1 | 1	2 | 4 | 6

Attention, Memory & Concentration

Increasing difficulty

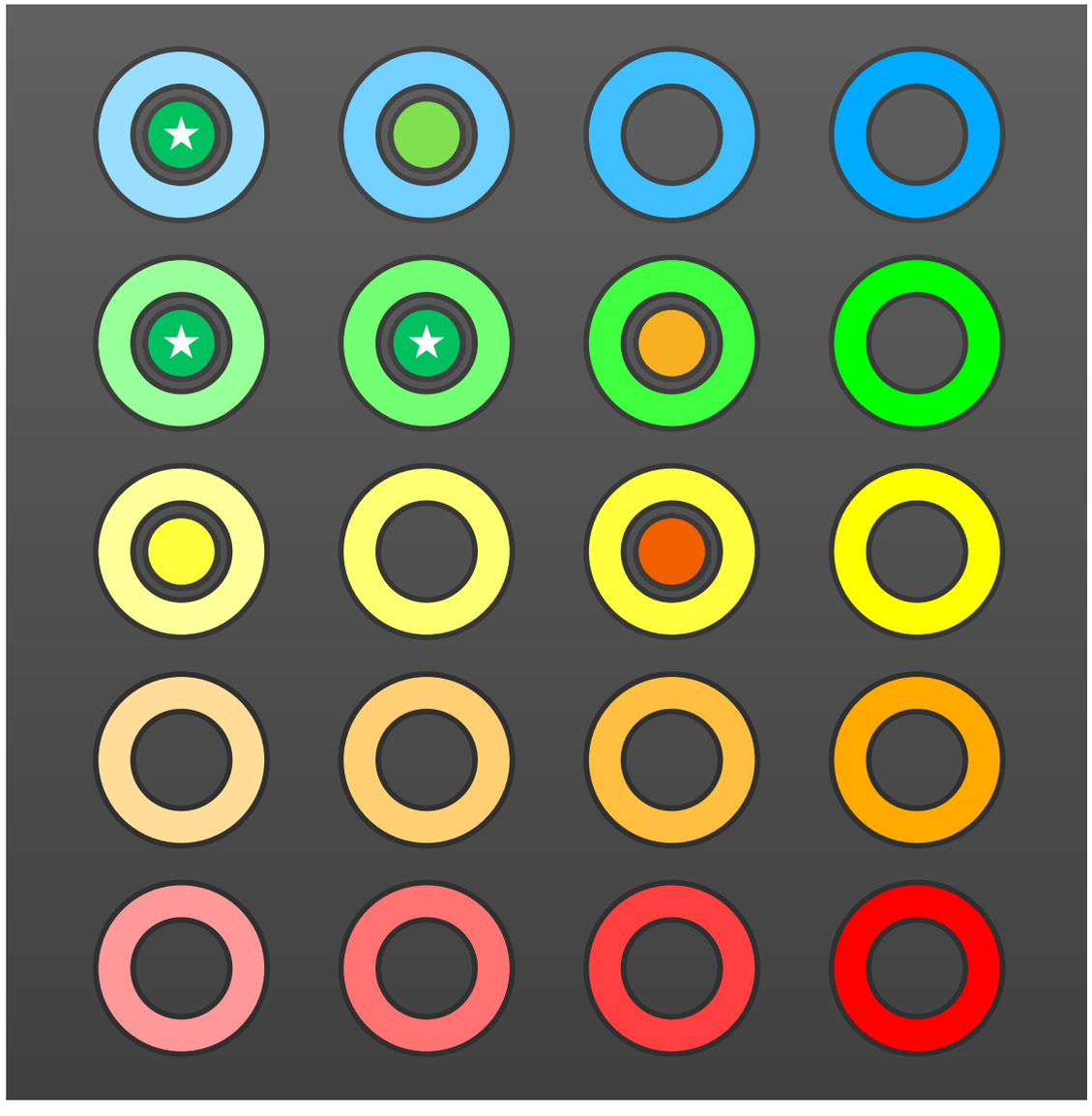
Difficulty settings: discrimination/differentiation

Sounds or sound sequences have different characteristics.
They can differ in timbre, pitch, inner pattern and volume.
For **Wheel of Sound**, the first three features are relevant.

1	2	3	4
Significant differences in all characteristics	Significant differences in two characteristics	Significant differences in one characteristic or slight differences in two characteristics	Minimal differences in one characteristic

Discrimination

Increasing difficulty



9.2 Sound Categories

Category	Animals	Vehicles	Music	Work	Daily Life	Nature	People	Miscellaneous
Subcategory	Birds	Road	Single Sound	Construction Site	Kitchen & Bathroom	Water	Emotions	Error Beep
	Pets	Railway	Monophonic Melody	Industry	Sports & Leisure	Wind & Weather	Applauding	Indicator Beep
	Wild Animals	Aviation	Polyphonic Melody	Housekeeping	Doors & Locks	Fire	Steps	Ascending Beeps
	Insects		Chords & Scales	Office	Bells & Buzzers		Miscellaneous	Descending Beeps
			Percussion – Single Hit	Miscellaneous	Sirens & Whistles			Confirmation & Reward
			Simple Percussion		Rumbling & Crashing			BOING! WHAM!
			Complex Percussion		Scratching, Crunching & Squeaking			Locating & Communication
			Percussion & Melody		Miscellaneous			Synthetic
			Without Rhythm					