

Appendix 1: EXAMPLE OF ITEM CODIFICATION

Recursos didáctico-matemáticos A

Nombre: .

3.- Indique cuáles son las ventajas y dificultades del uso que se ha dado a Jclie como herramienta (1 punto).

Ventajas (potencialidades):

① Motivación hacia el aprendizaje de las matemáticas o de cualquier otra materia, ya que utiliza la gamificación para lograr otros aprendizajes al niño o a la niña.

② Variabilidad de actividades y juegos que se pueden crear, para las cuales no es necesaria demasiada formación previa, por lo que los docentes, empleando pequeños ratitos al día, pueden elaborar tareas diariamente si fuese necesario.

③ Facilidad en su manejo y posibilidad de incluir tanto texto como sonidos, permitiendo que así podamos adaptarlo a prácticamente ④

Dificultades:

① El hecho de que en ocasiones falle el programa.

② El escaso material informático con el que cuentan las escuelas hoy en día.

③ todos los edades e incluso a niños/as sordos o con problemas de funcionalidad motora, autismo... ya que las imágenes, la longitud de la tarea, los sonidos, el texto, la temática... todo puede crearse y modificarse en función de las necesidades.

④ La posibilidad de utilizar estos juegos el alumnado en su hogar, siempre y cuando los padres se lo permitan.

Figure 1. Original responses from students S5.

TRANSLATION AND CODIFICATION (The items below are colour-coded, with each code assigned a specific colour):

Advantages:

- Increased motivation to learn mathematics or any other subject, since it uses gamification to help children acquire knowledge.
- Variety of activities and games that can be created without requiring extensive prior training, allowing teachers to design tasks daily if needed, using just small moments throughout the day.
- Ease of use and the possibility of including both text and sounds, allowing us to adapt it to practically all ages even to deaf children or those with motor function

issues, autism... since images, task length, sounds, text, themes... everything can be created and modified according to the learners' needs.

- The possibility for students to use these games at home, as long as their parents allow it.

Difficulties:

- The fact that the program occasionally malfunctions.
- The limited computer equipment that schools have nowadays.

List of codes with their corresponding colour:

Possibility of working on a variety of mathematical content

Can be used at different educational levels

Allows working on any subject

Creation of customised activities

Motivation

Attention to special educational needs

Variety of options in tasks (use of different modes of representation, help...)

Variety of types of tasks

Easy to handle (for teachers and students)

Accessibility

Outdated software/technical limitations

Lack of ICT resources

Appendix 2: INDUCTIVE THEMATIC ANALYSIS CODEBOOK

Three representative items are presented per theme. The formal definitions of themes and codes, alongside the specific inclusion and exclusion criteria for the coding process, are detailed. The full anonymised dataset is available from the corresponding author upon reasonable request.

POSITIVE THEMES

THEME 1: Curricular potential

Definition: Capacity of the software to adapt to different mathematical contents, subjects, and educational levels.

Associated Codes:

- Possibility of working on a variety of mathematical content
- Can be used at different educational levels
- Allows working on any subject

Code: Possibility of working on a variety of mathematical content

- *Definition:* References to the software's ability to cover specific or general mathematical topics.
- *Inclusion:* Mentions of numbers, geometry, logic, operations, or "math content" in general.
- *Exclusion:* Mentions of other non-mathematical subjects.

Code: Can be used at different educational levels

- *Definition:* The software's adaptability to various ages or developmental stages.
- *Inclusion:* Mentions of 'ages,' 'preschool,' 'primary,' 'levels,' or adapting the complexity for different grades.
- *Exclusion:* Adaptation for specific disabilities (coded as *Special educational needs*).

Code: Allows working on any subject

- *Definition:* The potential to use the tool for disciplines other than mathematics.
- *Inclusion:* Mentions of language, environment, transversal skills, or 'any subject.'
- *Exclusion:* References strictly limited to mathematics.

Items (Examples):

[Code: Possibility of working on a variety of mathematical content] "El JClic es una herramienta que se puede utilizar para trabajar varias materias o contenidos, incluso en diferentes niveles educativos." (S24) [JClic is a tool that can be used to work on various subjects or content]

[Code: Can be used at different educational levels] “...posibilidad de incluir tanto texto como sonidos, permitiendo que así podamos adaptarlo a prácticamente todas las edades...” (S5) [...possibility of including both text and sounds, allowing us to adapt it to practically all ages...]

[Code: Allows working on any subject] “Permite a los docentes crear sus propias actividades personalizadas para trabajar cualquier área del currículo infantil.” (S2) [It allows teachers to create their own customised activities to work on any area of the early childhood curriculum.]

THEME 2: Flexibility of the software in activity design

Definition: Versatility of the software in creating and modifying tasks.

Associated Codes:

- Creation of customised activities
- Variety of options in tasks (use of different modes of representation, help...)
- Variety of types of tasks

Code: Creation of customised activities

- *Definition:* The role of the teacher as an active designer who creates or modifies materials to fit specific needs.
- *Inclusion:* References to ‘creating,’ ‘designing,’ ‘modifying,’ or ‘adapting’ activities by the teacher.
- *Exclusion:* Using pre-made activities without modification.

Code: Variety of options in tasks (use of different modes of representation, help...)

- *Definition:* The availability of multimedia elements and support features within the activities.
- *Inclusion:* Mentions of images, sounds, text, audio, time limits, or help messages.
- *Exclusion:* The structural type of the game (e.g., puzzle, association).

Code: Variety of types of tasks

- *Definition:* The diversity of game mechanics or activity formats available in the library.
- *Inclusion:* Mentions of puzzles, memory games, associations, text filling, crosswords.
- *Exclusion:* Visual aesthetics of the task.

Items (Examples):

[Code: Creation of customised activities] “Permite variar el grado de dificultad, lo que es bueno para utilizarlo desde niños pequeños hasta mayores.” (S19) [It allows for

varying the level of difficulty, which is good for using with both younger and older children]

[Code: Variety of options in tasks (use of different modes of representation, help...)]
“Hay gran cantidad de recursos que el docente puede expresar en cada tarea (sonidos, imágenes, tiempo, enlaces a cualquier web...)” (S10) [There are a large number of resources that the teacher can utilise in each task (sounds, images, time, links to any website...)]

[Code: Variety of types of tasks] “Hay muchos tipos de tareas (crucigrama, sopa de letras, respuesta escrita...)” (S24) [There are many types of tasks (crossword puzzles, word searches, written responses...)]

THEME 3: Fosters student learning

Definition: Elements that support student attention, motivation, and inclusion.

Associated Codes:

- Attention to special educational needs
- Student learning control
- Motivation
- Fosters attention

Code: Attention to special educational needs

- *Definition:* Features that allow the software to be used by students with disabilities or specific learning difficulties.
- *Inclusion:* Mentions of deafness, motor difficulties, autism, visual impairment, or ‘diversity.’
- *Exclusion:* General difficulty adjustments for neurotypical age differences.

Code: Student learning control

- *Definition:* Feedback mechanisms that allow students or teachers to track progress.
- *Inclusion:* Statistics, time counters, error tracking, immediate feedback, scores.
- *Exclusion:* General comments on ‘learning’ without mention of tracking/control mechanisms.

Code: Motivation

- *Definition:* The software's ability to engage students and make learning appealing.
- *Inclusion:* Mentions of fun, interest, games, gamification, playfulness, dynamic environment.
- *Exclusion:* Usefulness or utility (if not linked to enjoyment).

Code: Fosters attention

- *Definition:* The capacity of the tool to maintain student concentration.
- *Inclusion:* Mentions of focus, concentration, visual appeal holding attention.
- *Exclusion:* Distractions or over-stimulation.

Items (Examples):

[Code: Motivation] “*Es un recurso que puede causar interés en los menores y aumentar su motivación de aprender, pues es muy dinámico y puede llegar a ser divertido para ellos.*” (S3) [It’s a resource that can spark interest in children and increase their motivation to learn, as it’s very dynamic and can even be fun for them.]

[Code: Attention to special educational needs] “*...podamos adaptarlo a prácticamente todas las edades e incluso a niños/as sordos o con problemas de funcionalidad motora, autismo...*” (S5) [...we can adapt it to practically all ages and even to deaf children or those with motor function issues, autism...]

[Code: Student learning control] “*...ya que gracias a las estadísticas y el contador de tiempo, intentos y aciertos que incluye podemos saber qué saben nuestros alumnos...*” (S17) [...ya que gracias a las estadísticas y el contador de tiempo, intentos y aciertos que incluye podemos saber qué saben nuestros alumnos...]

THEME 4: Accessibility and usability

Definition: Ease of handling and access for teachers and students.

Associated Codes:

- Accessibility
- Easy to handle (for teachers and students)

Code: Accessibility

- *Definition:* The availability of the resource in terms of cost, location, and connectivity.
- *Inclusion:* Use at home, free software, open source, no internet required, offline use.
- *Exclusion:* Accessibility related to disability (coded as *Special educational needs*).

Code: Easy to handle (for teachers and students)

- *Definition:* The user-friendliness of the software interface for both playing the games (students) and creating/editing the activities (teachers).
- *Inclusion:* Intuitive, simple, easy to play, easy to navigate, easy to design tasks, user-friendly authoring tool.
- *Exclusion:* Specific technical failures or bugs (coded under Technical aspects); negative experiences regarding difficulty or steep learning curves (coded under Learning the software for task design).

Items (Examples):

[Code: Accessibility] “*está al alcance de cualquier persona que tenga un ordenador.*” (S18) [It is available to anyone with a computer.]

[Code: Accessibility] “*No necesita Internet para que los niños puedan jugar.*” (S2) [Children can play without an internet connection.]

[Code: Easy to handle (for teachers and students)] “*JClic es un recurso fácil de manejar tanto para alumnos como para profesores.*” (S18) [JClic is an easy-to-use resource for both students and teachers.]

THEME 5: General evaluation / Suitability

Definition: General assessment of the software’s appropriateness for the educational stage.

Code: Suitable software for introducing ICT in preschool education

- *Definition:* Appropriateness of the tool for facilitating early childhood digital literacy and familiarization with hardware/software.
- *Inclusion:* Mentions of ‘introduction to technology,’ ‘first contact with computers,’ ‘learning to handle the mouse,’ or developing basic digital skills.
- *Exclusion:* References focused solely on learning specific curricular content (e.g., learning numbers *using* the PC -> Theme 1) or general comments about the interface being intuitive without mentioning digital literacy (-> Theme 4).

Items (Examples):

[Code: Suitable software for introducing ICT in preschool education] “*Introduce al alumnado en el manejo de las TICs.*” (S9) [Introduce students to the use of ICT.]

[Code: Suitable software for introducing ICT in preschool education] “*Es un acercamiento al uso de las TICs en el aula, sobre todo en la de los más pequeños, donde el uso de las TICs no es muy común.*” (S19) [It is an introduction to using ICT in the classroom, especially for younger children, where ICT is not commonly used.]

[Code: Suitable software for introducing ICT in preschool education] “*Es una herramienta digital que permite introducir y acercar las tecnologías de la información y comunicación al alumnado.*” (S6) [It is a digital tool that helps introduce and integrate information and communication technologies (ICT) for students.]

THEME 6: Training Programme Assessment

Definition: Aspects related to the training course itself rather than the software.

Associated Code: Advantageous aspects of the training programme.

Code: Advantageous aspects of the training programme

- *Definition:* Positive impact of the university course/training on the student's professional development.
- *Inclusion:* Learning to be a teacher, reflecting on practice, creating materials for the future, research skills.
- *Exclusion:* Features of the software itself (unless linked to the teacher's professional growth).

Items (Examples):

[Code: Advantageous aspects of the training programme] “...con la realización de estas tareas no solo hemos aprendido una aplicación que realmente podemos usar en nuestro futuro como docentes, sino que además hemos razonado y argumentado cómo el alumno de infantil adquiere los conocimientos a través de las diferentes actividades que diseñamos.” (S7) [Not only have we learned an application that we can actually use in our future as teachers, but we have also reasoned and argued how preschool students acquire knowledge through the different activities we design.]

[Code: Advantageous aspects of the training programme] “Entre otras, me ha ayudado a la hora de estudiar para poder entender los conceptos mejor. Como futura docente para tener más material y poder realizar actividades nuevas y motivacionales. Nos ayuda a investigar sobre algo nuevo.” (S14) [Among other things, it has helped me when studying to better understand the concepts. As a future teacher, it will provide me with more material and allow me to create new and motivating activities.]

[Code: Advantageous aspects of the training programme] “Además, como herramienta de aprendizaje para el alumnado o estudiantes del grado de educación infantil, me ha parecido muy motivador, puesto que hemos sido nosotras mismas las que hemos creado nuestras propias actividades.” (S4) [As a learning tool for preschool students or students in the education degree, I found it very motivating since we ourselves created our own activities.]

NEGATIVE THEMES

THEME 7: Technical aspects of the software

Definition: Technical limitations and management of the software.

Associated Codes:

- Outdated software/technical limitations
- Software management

Code: Outdated software/technical limitations

- *Definition:* Issues related to the age of the software, bugs, or visual obsolescence.
- *Inclusion:* ‘Old,’ ‘outdated,’ ‘bugs,’ ‘crashes,’ ‘Java problems,’ ‘errors.’
- *Exclusion:* Difficulty in understanding how to use it (usability issues).

Code: Software management

- *Definition:* Difficulties related to file handling, installation, or administrative functions.
- *Inclusion:* Saving projects, file extensions, installing libraries, exporting.
- *Exclusion:* Problems with the design of the activity itself.

Items (Examples):

[Code: Outdated software/technical limitations] “*Es una aplicación antigua, por lo que da problemas a la hora de meter mucho contenido externo...*” (S19) [It is an outdated application, which causes problems when trying to upload a lot of external content...]

[Code: Software management] “*multitud de funciones de ciertos elementos dificultan en ocasiones un resultado más fructífero. Por otro lado, se debe tomar cierta precaución por dónde guardar los archivos de tu proyecto...*” (S20) [The large number of functions sometimes makes it difficult to get the most effective results. Additionally, one must be cautious about where to save project files...]

[Code: Software management] “*No permite el uso compartido de 2 o más ordenadores a la hora de diseñar tareas.*” (S19) [It does not allow shared use of 2 or more computers for designing tasks.]

THEME 8: Learning the software for task design

Definition: The effort required to learn how to design activities.

Associated Codes:

- Learning the software for task design

Code: Learning the software for task design

- *Definition:* The learning curve and time investment required for the teacher to master the authoring tool.
- *Inclusion:* Complexity of the interface, time-consuming creation, need for tutorials, confusing menus.
- *Exclusion:* Difficulty for the student playing the game.

Items (Examples):

[Code: Learning the software for task design] “*Crear actividades con JClic supone tiempo y esfuerzo por parte del docente... Además, puede ser una dificultad añadida si*

no saben cómo manejar el programa... ” (S8) [Creating activities with JClic requires time and effort from the teacher... additionally, it can be an added difficulty if they do not know how to use the software].

[Code: Learning the software for task design] *“Resulta un poco compleja porque hay que elaborar muchos aspectos y apartados tanto relacionados con la parte técnica de las actividades como relativos a la propia estética de las mismas...” (S6) [It is somewhat complex because many aspects need to be designed or managed, both related to the technical side of the activities and their aesthetics...]*

[Code: Learning the software for task design] *“Algunos de los botones o apartados no se entendían bien, por lo que era necesario buscar vídeos de tutoriales que explicaran su funcionamiento.” (S6) [Some buttons or sections were unclear, so it was necessary to look for tutorial videos explaining their use.]*

THEME 9: Hinders student learning

Definition: Factors that limit certain learning methodologies.

Associated Codes:

- Hinders student learning

Code: Hinders student learning

- *Definition:* Pedagogical limitations inherent to the software's format.
- *Inclusion:* Lack of physical interaction, lack of manipulatives, promotes individualism, prevents group work.
- *Exclusion:* Technical errors or bugs.

Items (Examples):

[Code: Hinders student learning] *“... enfoca las tareas a nivel individual, algo que es muy importante, pero no permite acciones más grupales o de puesta en común.” (S10) [It focuses tasks on an individual level, which is very important, but does not allow for more group actions or sharing.]*

[Code: Hinders student learning] *“Realmente con esta herramienta no podemos trabajar modelos manipulativos con el alumnado que es bastante importante para que puedan materializar los conceptos matemáticos abstractos...” (S9) [With this tool, we cannot work with manipulative models with students, which is quite important for them to materialise abstract mathematical concepts...]*

[Code: Hinders student learning] *“Si el docente no dedica inicialmente un tiempo para explicar al alumnado cómo funciona cada actividad del programa y el propio programa en sí, puede que no sepan cómo hacerlo porque para algunos aspectos no es tan intuitivo.” (S9) [If the teacher doesn't take time at the beginning to explain how each*

activity and the software itself work, students may not know what to do, since some parts aren't very intuitive.]

THEME 10: Context

Definition: External factors such as school resources.

Associated Codes:

- Lack of ICT resources

Code: Lack of ICT resources

- *Definition:* Limitations related to hardware infrastructure or access in schools and homes.
- *Inclusion:* Lack of computers, broken devices, no internet access in the classroom, digital divide.
- *Exclusion:* Limitations of the specific software (*JClic*).

Items (Examples):

[Code: Lack of ICT resources] *“En algunas ocasiones, no todo el alumnado puede tener acceso a medios tecnológicos, igual que algunos colegios.” (S24)* [In some cases, not all students have access to technological resources, and some schools face the same issue.]

[Code: Lack of ICT resources] *“Es un programa de ordenador, por lo que aquellos niños/as que no tengan este dispositivo, es complicado que puedan aprender a partir de este.” (S12)* [It is computer software, so for children who do not have access to a computer, learning from it is difficult.]

[Code: Lack of ICT resources] *“El escaso material informático con el que cuentan las escuelas hoy en día.” (S5)* [The limited computer resources currently available in schools.]

Appendix 3: EXCERPTS FROM AN HLT DESIGNED BY THE STUDY PARTICIPANTS

Presented below is a summary of one of the Hypothetical Learning Trajectories (HLTs) designed by one of the groups of pre-service teachers. For each task, the students specified the type of *JClic* activity employed: exploration, simple association, complex association, identification, double puzzle, or written response. Certain tasks provide ‘help’ features to assist in completing the activity, or ‘information’ to guide the solution process. In all tasks, the task instructions are also provided in spoken form. The most significant portions of the students’ justifications are presented within their written mathematical-didactic discourse.

Objetivos de aprendizaje: *Aprender algunas figuras geométricas y relacionarlas con elementos de la vida cotidiana.*

En las tareas se trabajará el nivel 1 y 2 de razonamiento de Van Hiele e incluso en una de ellas [...] pertenece al nivel 3.

[Learning Objectives: To identify various geometric shapes and relate them to everyday objects.

The tasks address Van Hiele levels 1 and 2 of geometric reasoning; one of them even [...] pertains to level 3.]

Tarea 1. Actividad de Exploración: “El espacio exterior”

[Task 1. Exploration Activity: ‘Outer Space’

- **Instruction:** ‘Do you want to know what I am? Click on me to find out.’
- **Definition (right panel):** ‘A triangle is a geometric shape with three sides and three angles.’]



En esta actividad se trabajará el sistema de representación gráfico (las figuras geométricas) y el sistema de representación verbal (la definición de cada figura). De

esta forma, los menores realizan un **proceso de traslación**, pasando de un sistema de representación gráfico a un sistema de representación verbal.

En segundo lugar, teniendo en cuenta el modelo de razonamiento de Van Hiele, con esta actividad se **trabaja el nivel 2 de razonamiento**, denominado “Análisis”. Puesto que **el número de lados que tiene una figura puede ayudar a determinar qué tipo de figura geométrica es**, el menor podrá reconocer al ver, por ejemplo, un triángulo, que este posee lados y que al ser tres es un triángulo.

[This activity focuses on both the **graphical representation system** (geometric shapes) and the **verbal representation system** (definitions). Consequently, the children engage in a **translation process**, moving from a graphical to a verbal representation system.

Furthermore, according to the Van Hiele model of reasoning, this activity addresses **Level 2** (‘Analysis’). Since **the number of sides helps determine the type of shape**, the child can recognise that a triangle, for instance, possesses specific attributes, such as having three sides, which allows them to identify it as such.]

Note: Key didactic-mathematical tools used in the analysis are highlighted in bold.

Tarea 2. Asociación simple: “¡Regalos oh oh!”

[Task 2. Simple Association: ‘Gifts Ho Ho!’

- **Instruction:** ‘You must match each geometric shape with the Christmas object it most closely resembles.’]



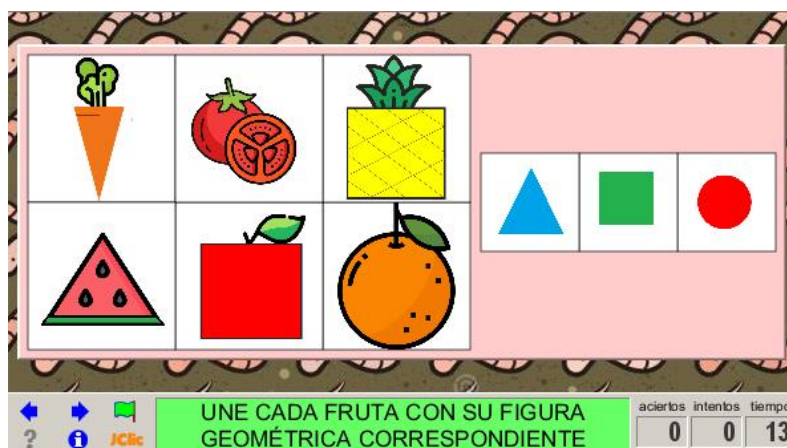
En esta actividad se trabajará el sistema de representación gráfico (figuras geométricas tanto planas como en 3D). Así, los menores tendrán que realizar transformaciones, de figuras planas a figuras en 3D. (...) teniendo en cuenta el modelo de razonamiento de Van Hiele, los menores trabajarán con esta actividad el nivel 1 de reconocimiento visual.

[This activity focuses on the graphical representation system (incorporating both 2D and 3D geometric shapes). Thus, the children are required to perform transformations, transitioning from 2D shapes to 3D objects. [...] according to the Van Hiele model of reasoning, this activity addresses Level 1: ‘Visualisation’.]

Tarea 3. Asociación compleja: “Las frutas tienen gusanos”

[Task 3. Complex Association: ‘Fruits have Worms’]

- **Instruction:** ‘Match each fruit with its corresponding geometric shape.’]



Con esta actividad se trabaja el sistema de representación gráfica, pues en ambos paneles aparecen diferentes formas geométricas representadas como gráficos cotidianos (tomate, zanahoria, naranja...), y gráficos matemáticos (un triángulo, un círculo y un cuadrado). De este modo, los alumnos/as harán transformaciones de unos a otros. [...] con esta actividad vamos a trabajar, teniendo en cuenta el modelo de razonamiento de Van Hiele, el nivel 1 de razonamiento: reconocimiento, donde el niño reconocerá visualmente las figuras por su forma y las asociará con su nombre y viceversa.

[This activity addresses the graphical representation system, as both panels display various geometric shapes represented as both everyday objects (tomato, carrot, orange...) and formal mathematical graphics (a triangle, a circle, and a square). In this way, students perform transformations between these two types of representations. [...] following the Van Hiele model of reasoning, this activity focuses on Level 1 (Recognition), where children visually recognise shapes based on their overall appearance and associate them with their names, and vice versa.]

Tarea 4. Actividad de Identificación: “¡Me gusta la ciudad!”

[Task 4. Identification Activity: ‘I love the city!’]

- **Instruction:** ‘Which traffic signs are circle-shaped?’]



En esta actividad se trabajará el sistema de representación gráfico cotidiano ya que están representadas las figuras geométricas como señales de tráfico y el sistema de representación verbal. Así, los menores tendrán que hacer una traslación ya que deben de leer el enunciado y posteriormente identificar la figura que se pide en el panel con las señales de tráfico. (...) teniendo en cuenta el modelo de razonamiento de Van Hiele, con esta actividad se trabajará el nivel 1 de razonamiento “reconocimiento o visual”, donde podrán reconocer las figuras visualmente por su forma y asociarlas con su nombre y viceversa.

[This activity addresses the everyday graphical representation system, in which geometric shapes are depicted as traffic signs, alongside the verbal representation system. Thus, the children are required to perform a translation process: they must read the prompt and then identify the specific shape requested from the panel of traffic signs. [...] regarding the Van Hiele model of reasoning, this activity focuses on Level 1 (‘Recognition’ or ‘Visualisation’), where children recognise shapes visually by their overall appearance and associate them with their respective names, and vice versa.]

Tarea 5. Puzzle doble: “Los animales geométricos”

[Task 5. Double Puzzle: ‘Geometric Animals’]

- **Instruction:** ‘In this activity, there is a square-shaped cat, a circle-shaped pig and a triangle-shaped fish. Will you help me put the puzzle together so these animals can return to their friends?’]



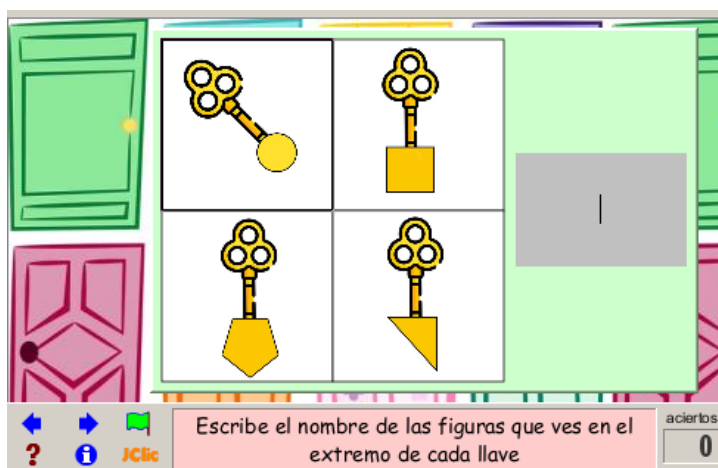
Con esta actividad se trabajará el sistema de representación gráfico (las figuras con forma de animal) y el sistema de representación verbal [...] cuadrado, círculo y triángulo. [...] al existir dos modos de representación en esta actividad, los menores trabajan las traslaciones. [...] teniendo en cuenta el modelo de razonamiento de Van Hiele, con esta actividad se trabajará el nivel 1 de reconocimiento, donde los menores percibirán de forma global las figuras.

[This activity addresses the graphical representation system (animal-shaped figures) and the verbal representation system [...] square, circle, and triangle. [...] as two modes of representation are involved, the children perform translations between them. [...] according to the Van Hiele model of reasoning, this activity focuses on Level 1 (Recognition), where children perceive the figures as a whole.]

Tarea 6. Respuesta escrita: “El mundo de las puertas”

[Task 6. Written Response: ‘The World of Doors’

- **Instruction:** ‘Write the names of the shapes you see at the end of each key.’]



En esta actividad encontramos, por un lado, un sistema de representación gráfico, pues aparecen representadas diferentes figuras geométricas, y, por otro lado, un sistema de representación verbal, pues en el panel de la derecha se tendrá que escribir el nombre que corresponde a cada figura. Teniendo en cuenta el modelo de razonamiento de Van Hiele, con esta actividad se trabajará el nivel 1 de reconocimiento o nivel visual. El menor reconocerá visualmente las figuras por su forma y las asociará con su nombre.

[In this activity, we find a graphical representation system, as various geometric shapes are depicted, alongside a verbal representation system, where the corresponding name for each shape must be written in the right-hand panel. According to the Van Hiele model of reasoning, this activity addresses Level 1 (Recognition or Visualisation). The children visually recognise the shapes based on their overall form and associate them with their respective names.]