

ENGLISH (EN)

# ICT-AAC Mathematics

User guide

Want to learn how to add, subtract, multiply and divide?

With ICT-AAC Mathematics you can practice a handful of basic mathematical operations:

1. WRITTEN ADDITION - Practice written addition of single and multi-digit numbers with and without carry over.
2. WRITTEN SUBTRACTION - Practice written subtraction of single and multi-digit numbers with and without carry over.
3. WRITTEN MULTIPLICATION - Practice written multiplication of single and multi-digit numbers with and without carry over of tens, hundreds, thousands, tens of thousands.
4. MULTIPLICATION TABLE - Learn the multiplication table by counting squares or with the classic 10x10 table.
5. WRITTEN DIVISION - Practice written division of single and multi-digit numbers with and without remainder. Practice tasks with partial quotient.

The application offers SETTINGS for each exercise enabling you to adjust the exercise to your liking. The settings are available by pressing the SETTINGS card on the top of the screen or by swiping left. Try to change SETTINGS when you choose an exercise.

The application was developed with the financial support of the Ministry of Science, Education and Sport as a part of the "How to learn this difficult mathematics" project, along with the partners from Croatian Down Syndrome Association, University of Zagreb FER and Trnjanska Elementary School, Zagreb, Croatia.

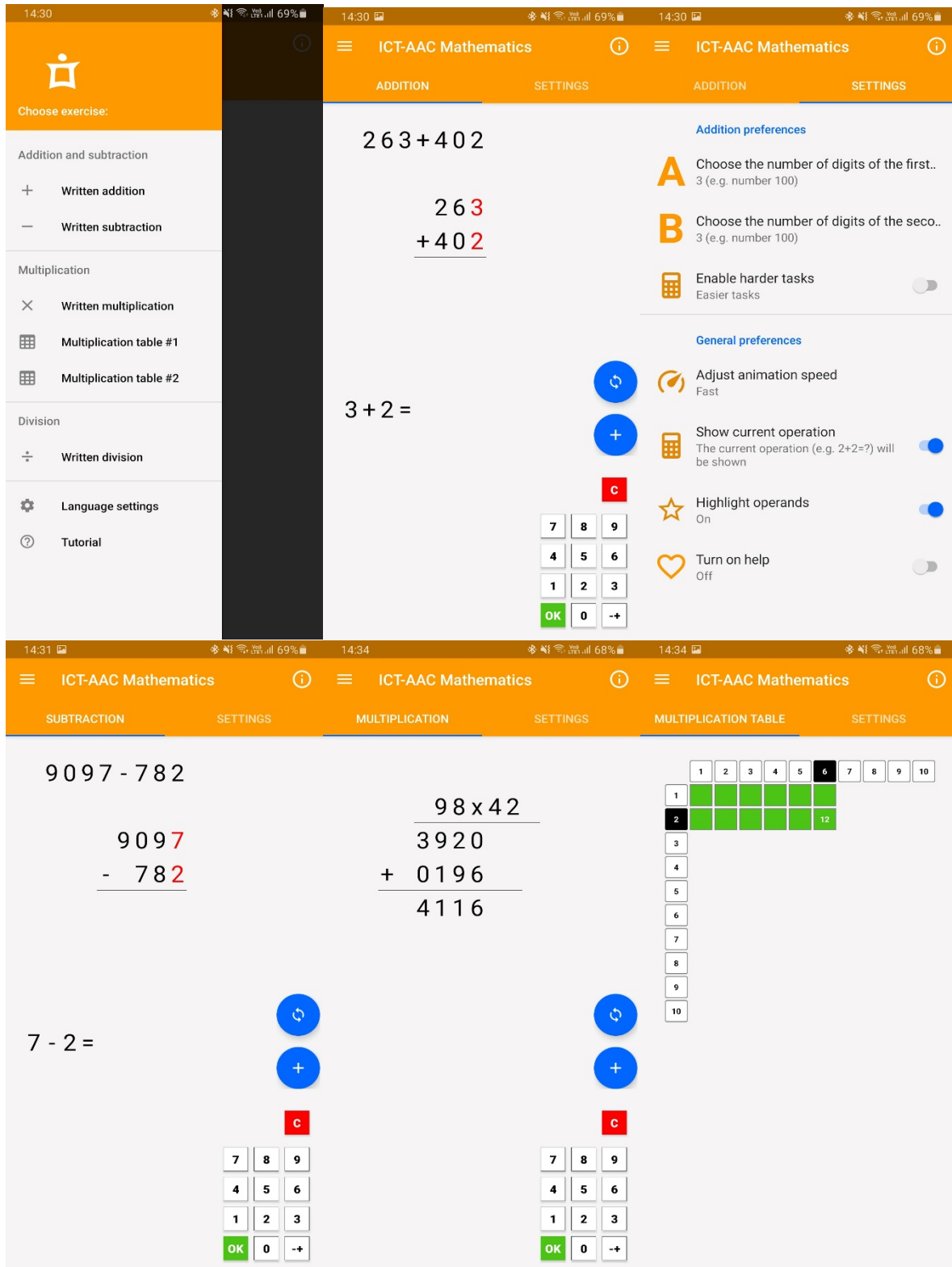


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**Screenshots:**


The screenshots show the ICT-AAC Mathematics app interface. The top navigation bar is orange and contains a menu icon, the app name 'ICT-AAC Mathematics', and an information icon. Below the navigation bar, there are tabs for 'ADDITION', 'SETTINGS', 'MULTIPLICATION', and 'MULTIPLICATION TABLE'. The main content area displays math problems and a calculator interface.

**Top Row (Addition):**

- Left sidebar: 'Choose exercise:' section with options for 'Addition and subtraction' (Written addition, Written subtraction), 'Multiplication' (Written multiplication, Multiplication table #1, Multiplication table #2), 'Division' (Written division), 'Language settings', and 'Tutorial'.
- Center:  $263 + 402$  with a vertical addition diagram showing 263 and 402 aligned by place value.
- Right: 'Addition preferences' section with options:
  - A: Choose the number of digits of the first.. 3 (e.g. number 100)
  - B: Choose the number of digits of the seco.. 3 (e.g. number 100)
  - Enable harder tasks: Easier tasks (toggle off)
  - General preferences:
    - Adjust animation speed: Fast
    - Show current operation: The current operation (e.g.  $2+2=?$ ) will be shown (toggle on)
    - Highlight operands: On (toggle on)
    - Turn on help: Off (toggle off)

**Middle Row (Multiplication):**

- Center:  $3 + 2 =$  with a calculator interface showing a blue '+' button, a red 'C' button, and a numeric keypad (7-9, 4-6, 1-3, OK, 0, -+).
- Right: A multiplication table grid with columns 1-10 and rows 1-10. The cell at row 2, column 6 is highlighted in green and contains the number 12.

**Bottom Row (Subtraction):**

- Left:  $9097 - 782$  with a vertical subtraction diagram showing 9097 and 782 aligned by place value.
- Center:  $98 \times 42$  with a vertical multiplication diagram showing 98 and 42 aligned by place value, resulting in 4116.
- Right: A calculator interface showing a blue '+' button, a red 'C' button, and a numeric keypad (7-9, 4-6, 1-3, OK, 0, -+).

HRVATSKI (HR)

# ICT-AAC Matematika

Korisnički vodič

Želiš li naučiti zbrajati, oduzimati, množiti i dijeliti?

Pomoću ICT-AAC Matematike možeš vježbati pregršt osnovnih matematičkih operacija:

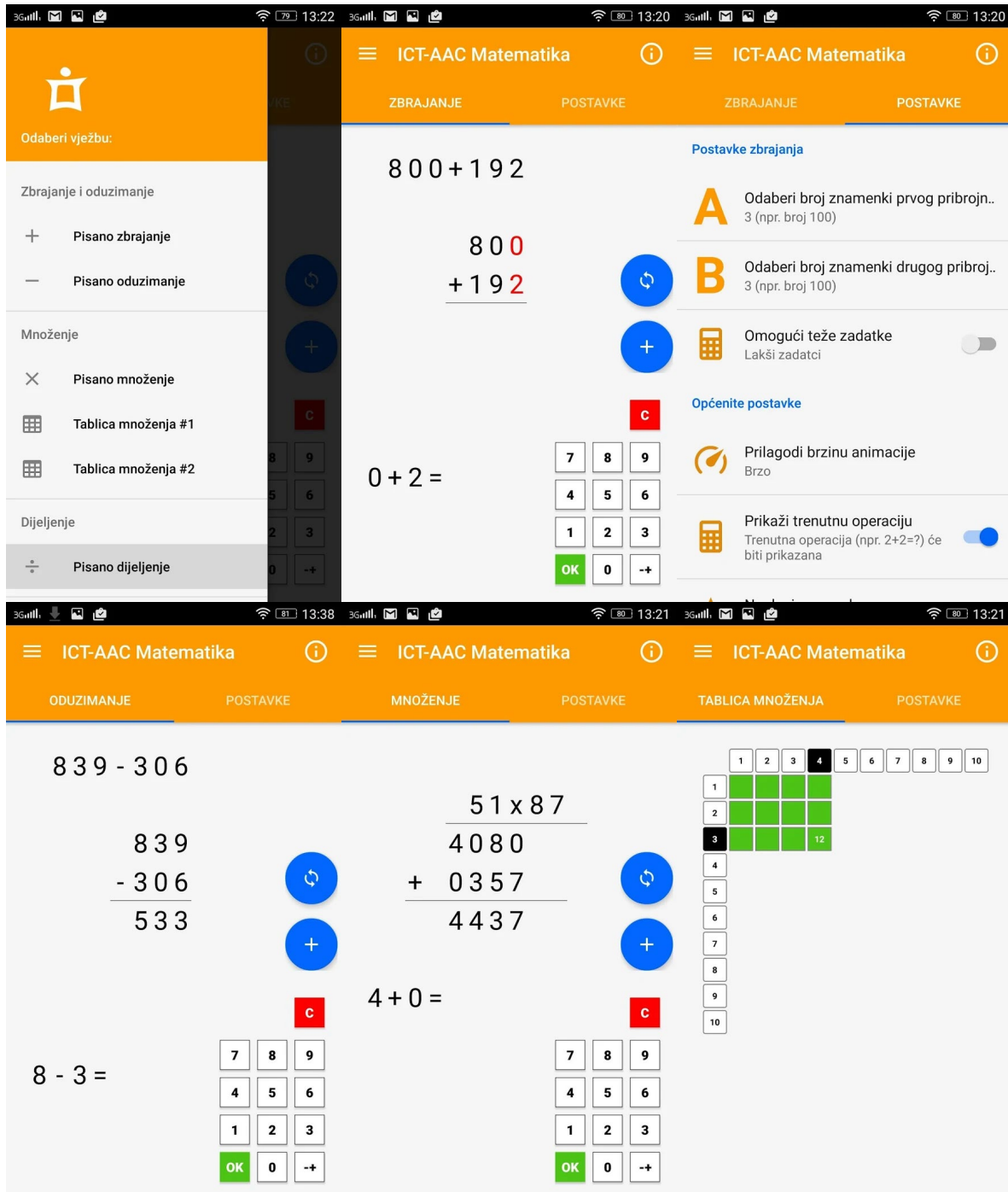
1. PISANO ZBRAJANJE - Vježbaj pisano zbrajanje jednoznamenkastih i višeznamenkastih brojeva s prijelazom i bez prijelaza.
2. PISANO ODUZIMANJE - Vježbaj pisano oduzimanje jednoznamenkastih brojeva s prijelazom i bez prijelaza.
3. PISANO MNOŽENJE - Vježbaj pisano množenje jednoznamenkastih i višeznamenkastih brojeva bez prijelaza i s prijelazom desetice, stotice, tisućice i desetstisućice.
4. TABLICA MNOŽENJA - Nauči tablicu množenja brojanjem kvadratića te klasičnom tablicom množenja 10x10.
5. PISANO DIJELJENJE - Vježbaj pisano dijeljenje jednoznamenkastih i višeznamenkastih brojeva s ostatkom i bez. Vježbaj zadatke s djelomičnim količnikom.

Aplikacija za svaku vježbu ima POSTAVKE pomoću kojih možeš detaljno prilagoditi samu vježbu. Postavke su dostupne pritiskom na karticu POSTAVKE na vrhu ekrana ili listanjem ekrana (tzv. gestom swipe) ulijevo. Isprobaj postavke čim odabereš neku vježbu!

ICT-AAC Matematika je razvijena uz financijsku potporu Ministarstva znanosti, obrazovanja i sporta u okviru projekta "Kako naučiti tu tešku matematiku", partneri Hrvatska zajednica za Down sindrom, Sveučilište u Zagrebu FER i O.Š. Trnjanska.



## Snimke zaslona:



The screenshots show the ICT-AAC Matematika application interface. The top navigation bar is orange and contains the title 'ICT-AAC Matematika' and a menu icon. Below the navigation bar, there are several sections:

- Odaberi vježbu:** A list of exercises including 'Zbrajanje i oduzimanje' (Addition and Subtraction), 'Množenje' (Multiplication), and 'Dijeljenje' (Division).
- Zbrajanje i oduzimanje:** A section for addition and subtraction, showing the problem  $800 + 192$  and the result  $992$ . It includes a calculator interface with a numeric keypad and buttons for '+', '-', 'OK', and '+-'. There are also buttons for 'ZBRAJANJE' and 'POSTAVKE'.
- Postavke zbrajanja:** A settings panel for addition, including options for 'Odaberi broj znamenki prvog pribroj.' (3), 'Odaberi broj znamenki drugog pribroj.' (3), 'Omogući teže zadatke' (Lakši zadatci), 'Prilagodi brzinu animacije' (Brzo), and 'Prikaži trenutnu operaciju' (Trenutna operacija (npr.  $2+2=?$ ) će biti prikazana).
- Množenje:** A section for multiplication, showing the problem  $51 \times 87$  and the result  $4437$ . It includes a calculator interface and buttons for 'MNOŽENJE' and 'POSTAVKE'.
- Tablica množenja #1:** A multiplication table grid with numbers 1-10 on the top and left axes. The cell for  $3 \times 4$  is highlighted with the value 12.
- Oduzimanje:** A section for subtraction, showing the problem  $839 - 306$  and the result  $533$ . It includes a calculator interface and buttons for 'ODUZIMANJE' and 'POSTAVKE'.

ESPAÑOL (ES)

# ICT-AAC Matemáticas

Guía del usuario

Con ICT-AAC Mathematics puedes practicar un montón de operaciones matemáticas básicas:

1. ADICIÓN ESCRITA - Practique la suma escrita de números de uno o varios dígitos con y sin arrastre.
2. SUSTRACCIÓN ESCRITA - Practique la resta escrita de números de uno o varios dígitos con y sin arrastre.
3. MULTIPLICACIÓN ESCRITA - Practique la multiplicación escrita de números de uno o varios dígitos con y sin arrastre de decenas, cientos, miles, decenas de miles.
4. TABLA DE MULTIPLICACIÓN - Aprende la tabla de multiplicar contando cuadrados o con la tabla clásica de 10x10.
- 5.-DIVISIÓN ESCRITA - Practica la división escrita de uno o más dígitos con y sin resto. Practica tareas con cocientes parciales.

La aplicación ofrece opciones de CONFIGURACIÓN para cada ejercicio, permitiendo ajustar el ejercicio a tu gusto. Las opciones están disponibles presionando CONFIGURACIÓN en la parte superior de la pantalla, o bien barriendo hacia la izquierda. Intenta cambiar la configuración cuando eliges un ejercicio.

La aplicación ha sido desarrollada con la financiación del Ministerio de Ciencia, Educación y Deportes como parte del proyecto “How to learn this difficult mathematics” (“Cómo aprender estas difíciles matemáticas”), junto con los socios de la Asociación Croata para el Síndrome de Down, la Facultad de Ingeniería Eléctrica (FER) de la Universidad de Zagreb y el colegio Trnjanska de Zagreb (Croacia).



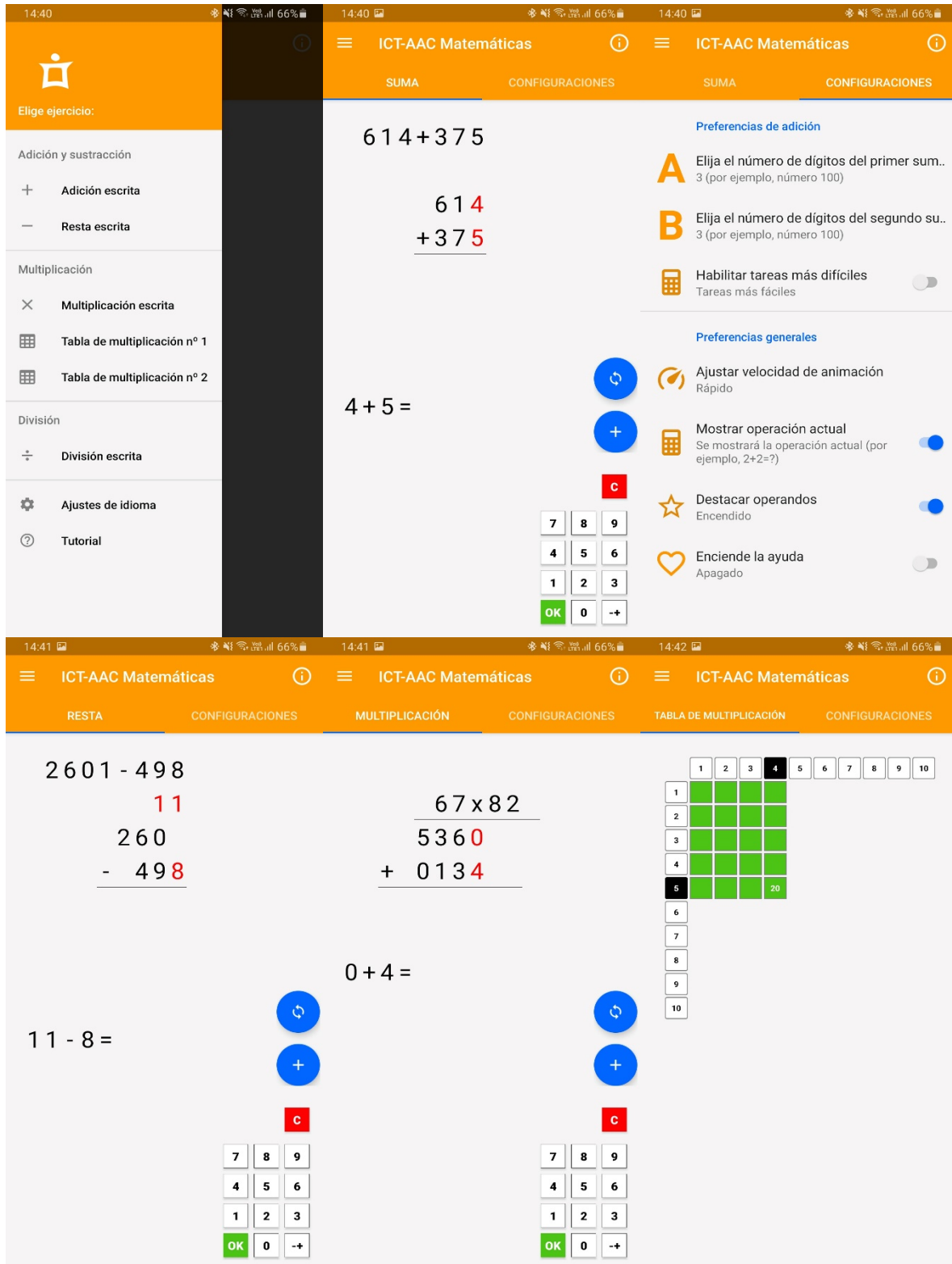
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### Capturas de pantalla:



The screenshots show the ICT-AAC Matemáticas application interface. The top navigation bar is orange and contains the app name and a hamburger menu icon. Below the navigation bar, there are tabs for different operations: SUMA, CONFIGURACIONES, RESTA, MULTIPLICACIÓN, and TABLA DE MULTIPLICACIÓN.

The main content area displays various math exercises and settings:

- Exercise 1:**  $614 + 375$  with a vertical addition layout showing the numbers aligned by place value.
- Exercise 2:**  $4 + 5 =$  with a simple addition problem.
- Exercise 3:**  $2601 - 498$  with a vertical subtraction layout.
- Exercise 4:**  $67 \times 82$  with a vertical multiplication layout.
- Exercise 5:**  $0 + 4 =$  with a simple addition problem.
- Exercise 6:**  $11 - 8 =$  with a simple subtraction problem.

The interface also includes a settings menu (CONFIGURACIONES) with options for:

- Preferencias de adición:**
  - A: Elija el número de dígitos del primer sum.. 3 (por ejemplo, número 100)
  - B: Elija el número de dígitos del segundo su.. 3 (por ejemplo, número 100)
  - Habilitar tareas más difíciles: Tareas más fáciles (toggle off)
- Preferencias generales:**
  - Ajustar velocidad de animación: Rápido
  - Mostrar operación actual: Se mostrará la operación actual (por ejemplo,  $2+2=?$ ) (toggle on)
  - Destacar operandos: Encendido (toggle on)
  - Enciende la ayuda: Apagado (toggle off)

The bottom part of the interface shows a numeric keypad with buttons for digits 0-9, OK, and +/-, along with a red 'C' button for clearing the display.

FRANÇAIS (FR)

# ICT-AAC Mathématiques

Mode d'emploi

Avec le ICT-AAC Mathématiques, tu peux t'exercer à faire une poignée d'opérations mathématiques de base:

1. ADDITION ÉCRITE - Pratique l'addition écrite de numéros à un ou plusieurs chiffres avec et sans retenue.
2. SOUSTRACTION ÉCRITE - Pratique la soustraction écrite de nombres à un ou plusieurs chiffres avec ou sans retenue.
3. MULTIPLICATION ÉCRITE - Pratique la multiplication écrite de nombres à un ou plusieurs chiffres avec et sans retenue de dizaines, centaines, milliers, dizaines de milliers.
4. TABLE DE MULTIPLICATION - Apprends la table de multiplication en comptant les carrés ou avec la table classique 10x10.
5. DIVISION ÉCRITE - Pratique la division écrite des numéros à un ou plusieurs chiffres avec et sans reste. Pratique des tâches avec un quotient partiel.

L'application propose des PARAMÈTRES pour chaque exercice, ce qui vous permet d'adapter l'exercice à votre convenance. Les paramètres sont disponibles en appuyant sur la carte PARAMETRES en haut de l'écran ou en glissant vers la gauche. Essaie de modifier les PARAMÈTRES quand tu choisis un exercice.

L'application a été développée avec le soutien financier du ministère des sciences, de l'éducation et du sport dans le cadre du projet "Comment apprendre ces mathématiques difficiles", avec les partenaires de l'Association croate du syndrome de Down, de l'Université de Zagreb FER et de l'école primaire Trnjanska, Zagreb, Croatie.



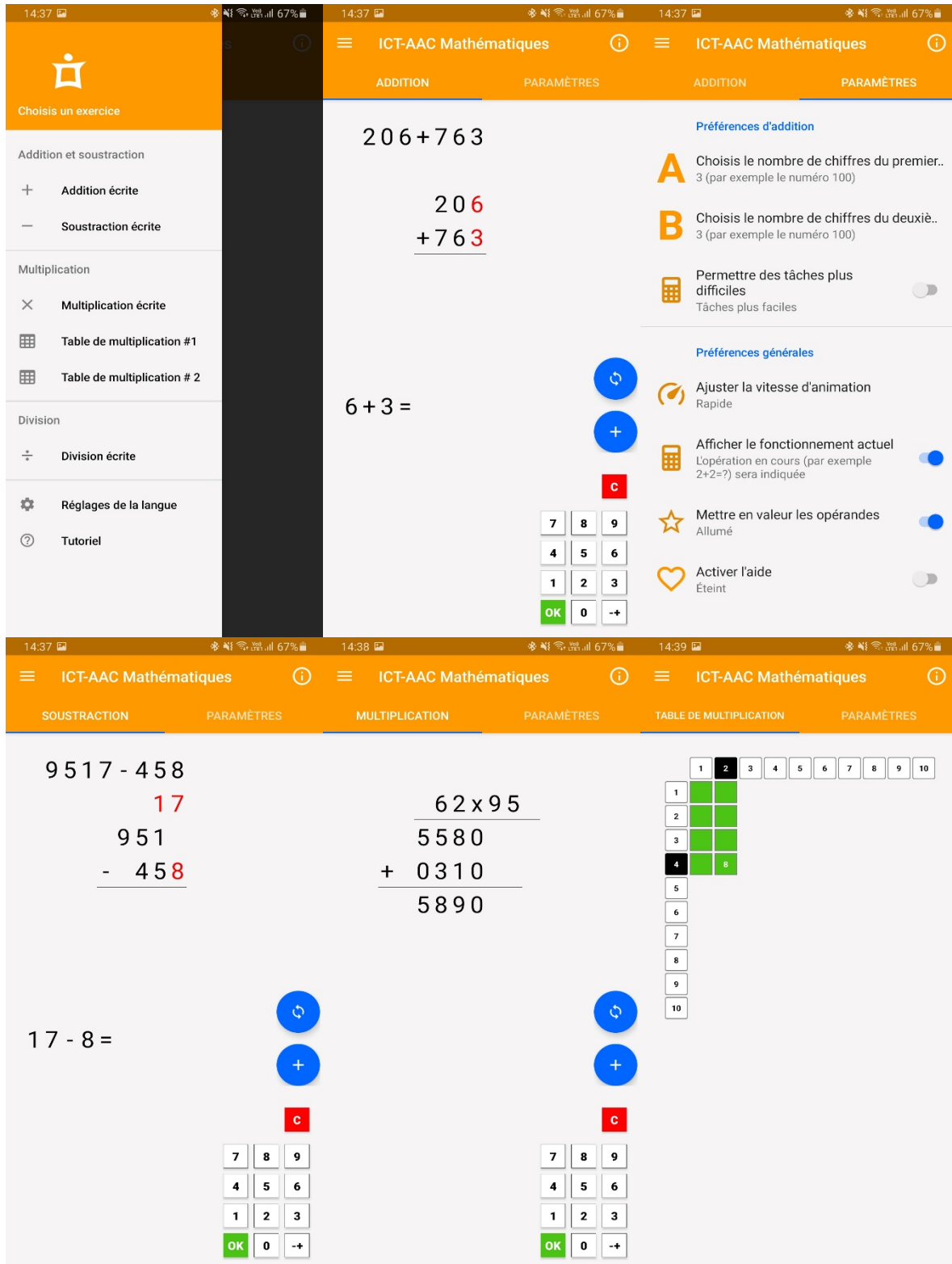
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## Les captures d'écran :



The screenshots show the ICT-AAC Mathematics application interface. The top navigation bar is orange and contains the title 'ICT-AAC Mathématiques' and a hamburger menu icon. Below the navigation bar, there are tabs for 'ADDITION' and 'PARAMÈTRES'. The main content area displays math exercises and settings.

**Top Screenshot (Addition):**

- Left sidebar: 'Choisis un exercice' menu with options: 'Addition et soustraction' (Addition écrite, Soustraction écrite), 'Multiplication' (Multiplication écrite, Table de multiplication #1, Table de multiplication #2), 'Division' (Division écrite), 'Réglages de la langue', and 'Tutoriel'.
- Main display: Shows the exercise  $206 + 763$  and  $6 + 3 =$ . A calculator keypad is visible at the bottom.
- Right sidebar: 'Préférences d'addition' (A: Choisir le nombre de chiffres du premier., B: Choisir le nombre de chiffres du deuxiè.), 'Préférences générales' (Ajuster la vitesse d'animation, Afficher le fonctionnement actuel, Mettre en valeur les opérands, Activer l'aide).

**Bottom Screenshot (Subtraction and Multiplication):**

- Navigation bar: 'SOUSTRACTION', 'PARAMÈTRES', 'MULTIPLICATION', 'PARAMÈTRES', 'TABLE DE MULTIPLICATION', 'PARAMÈTRES'.
- Main display: Shows subtraction exercises  $9517 - 458$  and  $17 - 8 =$ , and multiplication exercises  $62 \times 95$  and  $17 - 8 =$ . A calculator keypad is visible at the bottom.
- Right sidebar: A grid of numbers 1-10, with 2, 4, and 8 highlighted.



PORTUGUÊS (PT)

# ICT-AAC Matemática

Guia de usuario

Queres aprender a somar, subtrair, multiplicar e dividir?

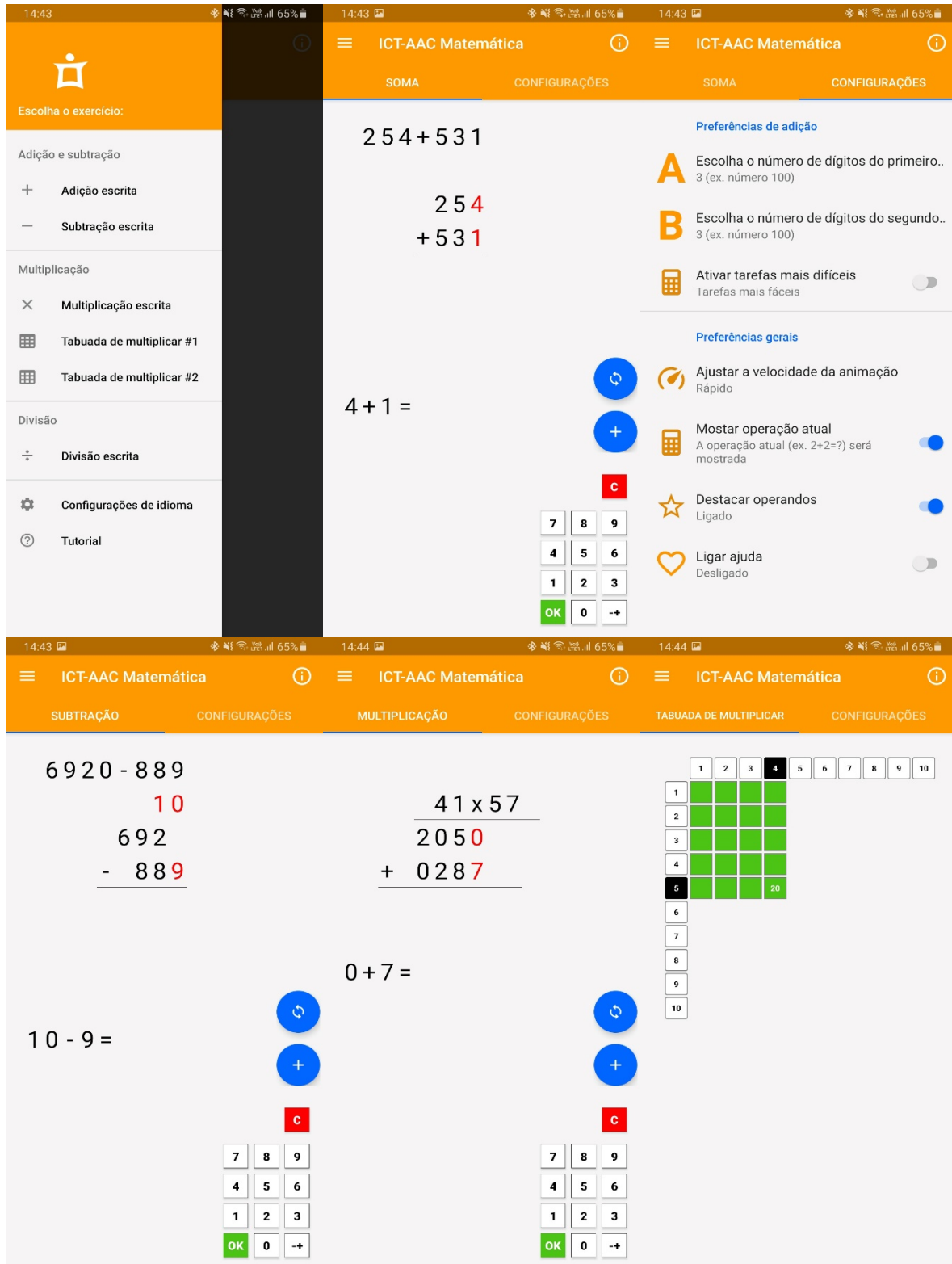
Com a AAC-TIC Matemática podes praticar um conjunto de operações matemáticas básicas:

1. ADIÇÃO ESCRITA - Pratica a adição escrita de números simples e de vários dígitos com e sem transição.
2. SUBTRAÇÃO ESCRITA - Pratica a subtração escrita de números simples e de vários dígitos com e sem transição.
3. MULTIPLICAÇÃO ESCRITA - Pratica a multiplicação escrita de números individuais e de vários dígitos com e sem transição de dezenas, centenas, milhares e dezenas de milhares.
4. TABELA DE MULTIPLICAÇÃO - Aprende a tabela de multiplicação contando quadrados ou com a tabela clássica 10x10.
5. DIVISÃO ESCRITA - Pratica a divisão escrita de números individuais e de vários dígitos com e sem restantes. Pratica tarefas com quociente parcial.

A aplicação dispõe de DEFINIÇÕES para cada exercício que permite ajustar cada exercício às tuas preferências. As definições estão disponíveis premindo o cartão DEFINIÇÕES na parte superior do ecrã ou rodando para a esquerda. Tenta alterar as DEFINIÇÕES quando escolheres um exercício.

A aplicação foi desenvolvida com o apoio financeiro do Ministério da Ciência, Educação e Desporto como parte do projeto "Como aprender esta matemática difícil", juntamente com os parceiros da Associação croata de Síndrome de Down, da Universidade de Zagreb FER e da escola primária Trnjanska, Zagreb, Croácia.



**Capturas de tela:**


The screenshots show the ICT-AAC Matemática app interface. The top navigation bar includes 'SOMA' (Addition) and 'CONFIGURAÇÕES' (Settings). The main content area displays math problems such as  $254 + 531$  and  $4 + 1 =$ . A numeric keypad is visible at the bottom of the screen. The settings panel on the right includes options for 'Preferências de adição' (Addition preferences), 'Preferências gerais' (General preferences), and 'Ativar tarefas mais difíceis' (Activate more difficult tasks).

The bottom screenshot shows a subtraction problem  $6920 - 889$  and a multiplication problem  $41 \times 57$ . It also features a 10x10 grid for multiplication and a numeric keypad.

MAGYAR (HU)

# ICT-AAC Matematika

Használati útmutató

Szeretnéd megtanulni, hogyan kell összeadni, kivonni, szorozni és osztani?

Az ICT-AAC matematika segítségével gyakorolhatod a következő alapvető matematikai műveleteket:

1. ÍRÁSBELI ÖSSZEADÁS - Gyakorold az egy- és többjegyű számok írásbeli összeadását átvitelrel vagy anélkül.
2. ÍRÁSBELI KIVONÁS - Gyakorold az egy- és többjegyű számok írásbeli összeadását átvitelrel vagy anélkül.
3. ÍRÁSBELI SZORZÁS - Gyakorold az egy- és többjegyű számok írásbeli szorzását tízes, száz, ezres, tízezres átlépéssel vagy anélkül.
4. SZORZÓ TÁBLA - Tanuld meg a szorzótáblát négyzetek számlálásával vagy a klasszikus 10x10 táblával.
5. ÍRÁSBELI OSZTÁS - Gyakorold az egy- és többjegyű számok írásbeli osztását maradékkal vagy anélkül.

Az alkalmazásban minden feladat a kedvedhez igazítható a BEÁLLÍTÁSOK-kal. A beállítási lehetőségek a kijelző tetején lévő BEÁLLÍTÁSOK felirat megnyomásával vagy balra húzásával érhetőek el. Egy új feladat választásakor változtass a BEÁLLÍTÁSOK-on.

Az applikáció fejlesztését a horvát Tudományos, Oktatási és Sport Minisztérium támogatta a "Hogyan tanuljuk meg ezt a nehéz matematikát" projekt keretében, melyben a partnerintézmények a Horvát Down-szindrómások Egyesülete, Zágrábi Egyetem Villamosmérnöki és Informatikai Kara és Trnjanska Általános Iskola voltak.

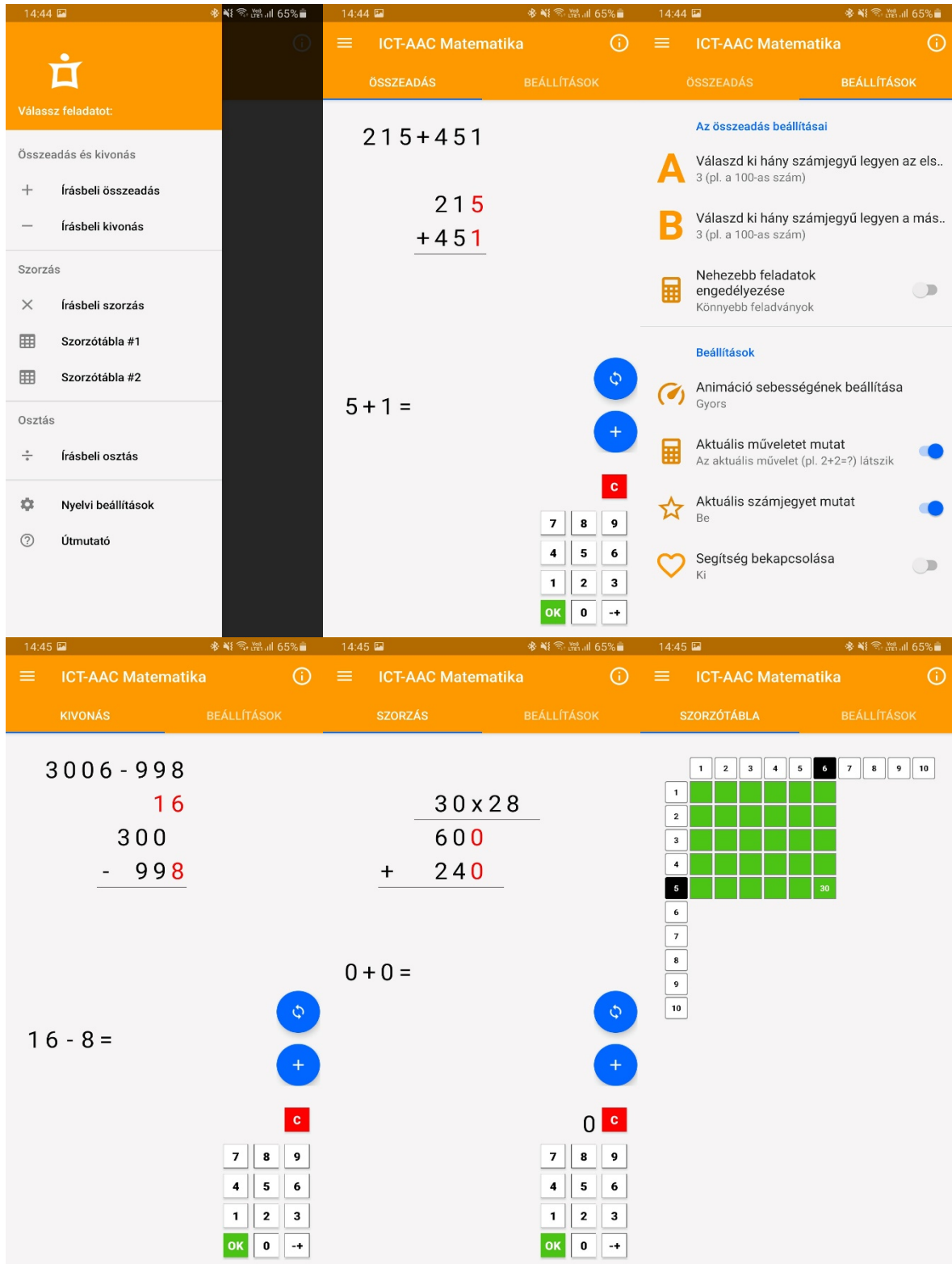


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**Képernyőképek:**


The screenshots show the ICT-AAC Matematika application interface. The top bar is orange and contains the title 'ICT-AAC Matematika' and navigation icons. The main content area is white and displays various mathematical exercises and settings.

**Top Left Screenshot:** Shows the 'Válassz feladatot:' (Choose task) screen. It has a sidebar menu with options: 'Összeadás és kivonás' (Addition and subtraction), 'Szorzás' (Multiplication), 'Osztas' (Division), 'Nyelvi beállítások' (Language settings), and 'Útmutató' (Help). Under 'Összeadás és kivonás', there are 'Írásbeli összeadás' (Written addition) and 'Írásbeli kivonás' (Written subtraction). Under 'Szorzás', there are 'Írásbeli szorzás' (Written multiplication), 'Szorzótábla #1' (Multiplication table #1), and 'Szorzótábla #2' (Multiplication table #2). Under 'Osztas', there is 'Írásbeli osztás' (Written division).

**Top Middle Screenshot:** Shows the 'ÖSSZEADÁS' (ADDITION) screen. It displays the problem  $215 + 451$  with a handwritten-style solution: 
$$\begin{array}{r} 215 \\ + 451 \\ \hline \end{array}$$
 Below it, the problem  $5 + 1 =$  is shown. A numeric keypad is visible at the bottom right.

**Top Right Screenshot:** Shows the 'BEÁLLÍTÁSOK' (SETTINGS) screen. It has a section 'Az összeadás beállításai' (Addition settings) with options: 'Válaszd ki hány számjegyű legyen az els.. 3 (pl. a 100-as szám)' (Choose how many digits the first.. 3 (e.g., the 100 number)), 'Válaszd ki hány számjegyű legyen a más.. 3 (pl. a 100-as szám)' (Choose how many digits the second.. 3 (e.g., the 100 number)), and 'Nehezebb feladatok engedélyezése' (Enable harder tasks) with a toggle switch. Below is a 'Beállítások' (Settings) section with: 'Animáció sebességének beállítása' (Set animation speed) with a 'Gyors' (Fast) option, 'Aktuális művelet mutat' (Show current operation) with a toggle switch and description 'Az aktuális művelet (pl.  $2+2=?$ ) látszik' (The current operation (e.g.,  $2+2=?$ ) is visible), 'Aktuális számjegyet mutat' (Show current digit) with a toggle switch and description 'Be' (On), and 'Segítség bekapcsolása' (Enable help) with a toggle switch and description 'Ki' (Off).

**Bottom Screenshot:** Shows the 'KIVONÁS' (SUBTRACTION) screen. It displays the problem  $3006 - 998$  with a handwritten-style solution: 
$$\begin{array}{r} 3006 \\ - 998 \\ \hline 16 \\ 300 \\ - 998 \\ \hline \end{array}$$
 To the right, a multiplication problem  $30 \times 28$  is shown with a handwritten-style solution: 
$$\begin{array}{r} 30 \times 28 \\ \hline 600 \\ + 240 \\ \hline \end{array}$$
 Below it, the problem  $0 + 0 =$  is shown. A numeric keypad is visible at the bottom.

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