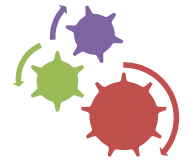


# Resource Tool for Considering Assistive Technology (RTCAT)



## A Resource Tool for Considering Assistive Technology (RTCAT)

Performance Areas Included in the Document	
Calculation	Vision
Reading	Hearing
Spelling	Mobility/Seating & Positioning
Compose Written Materials	Listening and Attending
Mechanics of Writing	Recreation and Leisure
Computer Access	Activities of Daily Living
Study and Organizational Skills	Transition to Adult Life
Communication	Behavioral

### Sample Tasks:

Sample tasks related to the individual Performance Area are listed in this section, from simple to more complex. This is not an exhaustive list and is intended primarily as a launching point for the IEP team to pinpoint the precise task(s) in which the student is having difficulty.

### Potential Accommodations and Modifications:

This section contains suggestions of a variety of traditional proven methods to accommodate and/or modify individual tasks and educational expectations as identified in the **Sample Task** section.

### Potential Assistive Technology Solutions:

This section includes specific types of Assistive Technologies (AT) that can be used to address the **Sample Tasks**, for which **Accommodations and Modifications** alone have not fully or partially addressed. The AT included in this section does not list specific product names, but rather includes a generic description of available products that have the potential of addressing the identified task(s). Solutions are listed from low-tech to high-tech to assist in the decision-making process.

# CALCULATIONS

## Sample Tasks of Concern

Identify numerals in isolation and sequence	Understand and use formulas
Understand meaning of numbers	Maintain and balance a checkbook
Comprehend basic math concepts	Understand improper fractions
Complete basic calculations(e.g., addition, subtraction, multiplication, and division)	Convert to mixed numbers
Tell time to the hour, half hour, etc., using an analog and /or digital clock	Understand place values
Calculate passage of time	Understand units of measurement
Identify coins and bills	Complete complex math calculations
Demonstrate understanding of coin and bill value	Understand tables and graphs
Utilize money to purchase items	Complete math word problems
Utilize coins and bills to make appropriate change	Other

## Potential Accommodations and Modification

Reduce number of problems	Math fact sheet (e.g. multiplication facts)
Provide additional time to complete tasks	Number line or raised number lines
Peer/adult assistance (e.g., reading of problem and recording of answer)	Enlarged math worksheets
Change format of assignment (e.g., write answers only)	Color coding strategies
Eliminate need to copy problem	Increase size of print (e.g., through photocopying)
Group similar problems together	Study carrels
Change complexity of material (e.g., separate problems by operations required)	Provide frequent breaks
Utilize manipulatives (e.g., beads, etc.)	Repeat, clarify, or reword assignments
Number line	Other

## Potential Assistive Technology Solutions

Modified paper (e.g., bold line, enlarged, raised line, graph paper, etc.)	Calculator with large print display
Abacus	Calculator with large keypad
Math "Smart Chart" (Conversion or fact)	Calculator with embossed output
Adapted measuring devices	Money Calculator
Flannel/Felt board and numbers	Calculator with special features (e.g., fraction translation)
Tactile numbers/signs	Computer based on-screen calculator
Math manipulatives	Software for math simulation
Talking watches/clocks	Electronic math worksheet software
Calculator	Adaptive access to calculation software
Calculator with speech output or Calculator with paper output	Other

# READING

## Sample Tasks of Concern

Identify letters in isolation and in sequence	Read material from board/overhead with comprehension
Recognize/read name	Read material from computer display with comprehension
Read basic/primer sight words	Read longer reading samples with comprehension and without fatigue
Read functional sight words (e.g., community, emergency, grocery, etc.)	Answer literal questions regarding materials read
Read target/select words within a sentence	Answer questions regarding main idea of materials read
Comprehend age/grade appropriate reading materials	Answer inferential questions regarding materials read
Read print materials from textbooks and supplemental materials	Other
Read materials from worksheet with comprehension	

## Potential Accommodations and Modification

Custom vocabulary list	Provide list of study questions prior to reading material
Decreased length of assignment	Study carrel
High interest, low reading level materials	Changes in text size, spacing, color and background color
Increased time for competing reading materials	Use of pictures/symbols with text
Simplify complexity of text	Provide frequent breaks
Peer/adult reading assistance	Repeat, clarify. Or reword assignments
Color coding to emphasize key points (e.g., highlighting)	Noise-canceling headphones
Increase print size of materials such as photocopying	Provide summaries of chapters
Use less text per page	Provide frequent feedback
Multi-modality instruction	Other
Provide page numbers	

## Potential Assistive Technology Solutions

Page turning supports and/or devices	Reading Pen
Slant board and book holders for positioning books	Speaking spellcheckers, dictionary, or thesaurus
Highlighting pen/tape	Computer with text enlargement software
Books adapted for page turning	Computer with text reading software
Color overlays	Computer with text reading software and tracking
Tracking device (e.g., reading window, bar magnifier)	Computer with text reading web browser
Predictable books	Computer with changed foreground/background color combination
Audiobooks	Scanner with Optical Character Recognition (OCR) software
Audio player with headphones	Adaptive access to reading software
Provide material through video or DVD	Other
Electronic books (e.g., Bookshare or Learning Ally)	

# SPELLING

## Sample Tasks of Concern

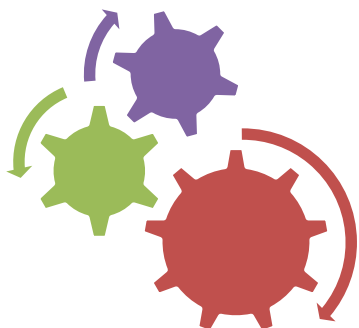
Identify correctly spelled word from printed list	Locate correctly spelled words in a dictionary
Write spelling words from dictation	Compete writing tasks with correct spelling
Spell words orally	Identify correct/incorrectly spelled words in writing sample
Take a written spelling test	Other
Use spelling words appropriately in a sentence	

## Potential Accommodations and Modification

Reduce number of spelling words	Print Dictionary
Reduce number of spelling words, focusing on functional words	Personal dictionary with frequently used words
Peer/adult assistance for difficult to spell words	Provide frequent breaks
Personal or custom dictionary	Provide frequent feedback
Problem word list	Repeat, clarify or reword assignments
Word wall	Other
Increased time for completing assignments	

## Potential Assistive Technology Solutions

Personal dry erase board for practice	Computer with word processing program with spell check feature
Flannel/Felt board and letters	Computer with talking word processing software containing speaking spell check
Magnetic letters and words	Computer with word prediction software
Audio recorder with difficult to spell words recorded	Adaptive access to spelling software
Portable, electric spellchecker with or without auditory output	Other
Portable word processor with built-in spellchecker	



# COMPOSE WRITTEN MATERIAL

## Sample Tasks of Concern

Spell individual words	Integrate information from two or more sources	Create entire sentences
Write short phrases	Relate information to specific topics	Develop an outline
Write complex phrase	Determine when to begin new paragraph	Work with peers to generate ideas
Write sentences	Generate ideas	Use correct capitalization, punctuation, grammar
Write paragraphs	Plan content	Use a variety of written forms (e.g., journal, essay, poem, letter)
Get started on a sentence or story	Use a variety of vocabulary	Write stories with a beginning, middle and end
Add information to a topic	Summarize information	Other
Sequence information	Answer questions	

## Potential Accommodations and Modification

Decreased length of written responses	Dictionary/thesaurus
Allow more time to complete tasks	Sentence fill-in
Content outline	Use rough drafts
Oral dictation as an alternative to writing	Process writing strategies
Peer writer/scribe/editor	Develop personal dictionary with correctly spelled words
Model document and form to work from	Word cards/book/wall
Story starters	Study carrel
Pre-set choices or plot twists	Color coding information
Webbing/concept mapping	Use testing format that requires little writing
Templates to provide format or structure	Repeat, clarify, or reword assignments
Drawings and diagrams	Substitute written assignment for other modalities
Provide frequent breaks	Other

## Potential Assistive Technology Solutions

Highlighter pens and tape	Symbol based software for writing
Audio recorder-record thoughts before writing/record story	Multimedia software
Electronic/talking spell checker	Electronic dictionary/thesaurus
Computer with changed foreground/background color combination	Outlining or brain storming ideas software
Computer with text enlargement software	Speech recognition software
Computer-based advance reading aids	Scanner with optical character Recognition for importing existing text
Computer graphic-based word processor	Adaptive computer access to composing materials
Computer graphic-based word processor	Other
Word processor with writing supports (e.g., abbreviation expansion or prediction)	

# MECHANICS OF WRITING

## Sample Tasks of Concern

Hold regular pencil	Compete written test with phrase/sentence(e.g., short answer)
Write name	Complete written test with essay response (e.g., short answer)
Copy letter/words/numbers for skills practice	Complete written test with essay response (e.g., multi-paragraph)
Write words from memory	Record notes from teacher dictation/lecture with teacher recording notes on
Copy print from book or worksheet	Generate creative/spontaneous writing samples
Copy notes from board or overhead	Enter number in correct location within calculation problems
Complete written worksheets with single word responses (e.g., fill-in-the-blank)	Copy math calculation problems with correct alignment
Complete written worksheets with phrase or sentence response	Record dictated math calculation problems with correct alignment
Compete written test with multiple choice response (e.g., circle/mark answer)	Copy diagrams and graphs and create plot lines and equations on graph
Complete written test and forms with fill-in-the-blank response	Other
Complete written test with matching response	

## Potential Accommodations and Modification

Decreased length of assignment/number of responses	Oral dictation as an alternative to writing
Word banks and sentence starters	Use of pre-written word/phrases
Provide typed outline or typed copy of lecture notes prior to delivery	Peer note taker with carbon paper
Student highlights key points on printed copy of notes rather than copying/recording lecture notes	Provide frequent breaks
Use webbing/concept mapping strategy	Other
Increased time for completing assignments	

## Potential Assistive Technology Solutions

Variety of pencils and pens	Non-slip writing surface (e.g., dycem)	Computer with graphic-based word processor
Built-up crayons and markers	Clipboard	Computer with word prediction software
Pencil grip or other adapted writing aids	Correction tape/pen/fluid	Computer with speech recognition software
Adapted paper (e.g., bold line, raised line, different spacing)	Book holder	Scanner and computer with form filling software to create electronic work sheets
Slant board	Audio recorder for dictated responses and note taking	Keyguards
Personal dry erase board	Type instead of writing by hand	Adaptive computer access to writing
Writing stabilizers	Portable word processor	Other
Writing guides	Note taking device (e.g., Braille, adapted tape recorder, smartboard)	
Arm stabilizers and wrist rests	Computer with word processing software and outlining/webbing software	

## Computer Access

### Sample Tasks of Concern

Able to depress individual keys	Able to follow presented directions and navigate throughout the system
Able to depress concurrent keys	Able to distinguish between operating system, application software and educational software and commands and sequences.
Able to find necessary keys	Able to initiate basic trouble-shooting strategies
Able to understand meaning of individual keys and key combinations	Abel to sustain extended periods of time with access method
Able to sustain extended periods of time with access method	Other
Able to sustain extended periods of time with access method	

### Potential Accommodations and Modification

Decrease volume of work	Additional time due to slow access method
Provide special furniture	Adapt computer work station (e.g., table height, chair height, or keyboard/mouse position)
Provide frequent breaks	Other
Individual/self-paced software based educational programs	

### Potential Assistive Technology Solutions

Keyboard with accessibility options (e.g., sticky keys, filter keys, toggle keys, mouse keys, serial keys)	Mouse or mouse alternative
Keyboard based macros	Alternative keyboard (e.g., enlarged keyboard, mini-keyboard, alphabet sequenced keyboard, one-handed keyboard, etc.)
Enlarged key labels on keys	On-screen keyboard
Arm support/wrist stabilizer/other positioning enhancing strategies	Switch(s) with Morse Code
Keyguard	Switch(s) with scanning
Word prediction	Ergonomic work station
Abbreviation expansion	Other
Access through different anatomic sites (e.g., head [headpointer], mouth [mouthstick]).	
Touchscreens	



# STUDY AND ORGANIZATIONAL SKILLS

## Sample Tasks of Concern

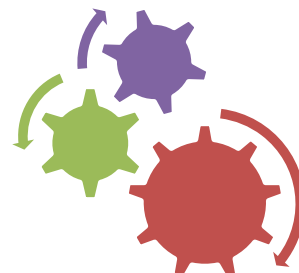
Copy assignments from board	Organize materials for a report or paper
Record assignments from teacher dictation	Establish sufficient time schedule to complete assignment
Remember assignments	Complete assigned task within designated timelines
Remember steps of task or assignment	Request teacher/peer assistance when needed
Take notes during lecture	Has appropriate materials/supplies for class activities
Review notes from lecture	Turn in assignments
Organize information/notes	Other

## Potential Accommodations and Modification

Reduce amount of work from regular assignment	Index cards
Limit changes in project sequences	Post schedule on bulletin board
Limit concurrent projects	Utilize study carrel
Allow for frequent breaks	Establish/maintain routine
Reduce visual/auditory distraction in the classroom	Provide duplicate set of text books
Provide additional time to complete assignment	Color-code components
Break assignments into shorter tasks	Post signs and label areas in room
Provide model of end product	Provide visual presentation to reinforce assignments
Assignment sheet provided by peer and/or adult	Use student self-monitoring sheets
Provide outlines and/or highlight of key points	Remove unnecessary material from student's desk
Create student schedule or checklist	Use timers
Position student strategically within classroom	Other

## Potential Assistive Technology Solutions

Organizational aids (e.g., color coding, appointment book, etc.)	Speech output prompting device
Audio recorder	Pager/electronic reminder
Provide verbatim audio recording of directions	Single word scanner
Electronic organizer/personal digital assistant	Software for organization of ideas and studying
Computer based electronic organizer with adapted input and output	Other





# COMMUNICATION

## Sample Tasks of Concern

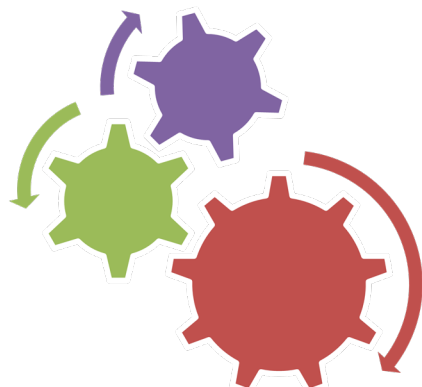
Gain attention of peers/adults within environment	Provide oral report in class on assigned topic
Express basic wants/needs	Inform others of events, topics, etc.
Request assistance as needed	Begin/terminate conversation
Provide appropriate greetings	Make/maintain eye contact
Participate in conversation with peers/teachers	Provide personal/identifying information
Respond appropriately to teacher/peer questions and/or comments	Other

## Potential Accommodations and Modification

Provide interpreter	Label objects in the environment
Provide verbal prompts	Proactive rhyming and word play
Model appropriate skills	Use gestures/body language/facial expressions
Repeat, clarify or reword assignments	Use props/pantomime/role playing
Allow additional response time	Reduce amount of communication required
Provide questions ahead of time	Other
Accept shortened responses	

## Potential Assistive Technology

Speech enhancing devices (e.g., amplifiers, clarifiers)	Voice output device with levels
Object based communication display	Voice output device with icon sequencing
Communication board/book with pictures/objects/letters/words	Voice output device with dynamic display
Eye gaze board/frame communication system	Device with speech synthesis for typing
Simple voice output device	Other
Talking Switches	



# VISION

## Sample Tasks of Concern

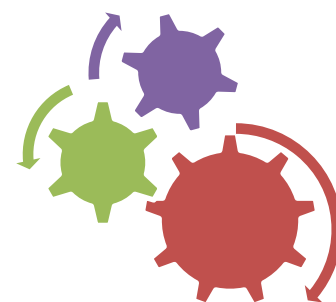
Read from blackboard	Write using correct space
Read from overhead	Write on line
Read from standard sized textbook print	Write appropriate size
Read handout material	Read own handwriting
Distinguish background and foreground colors	Read someone else's writing
Read from blackboard	Use regular answer sheets
Read from overhead	Other

## Potential Accommodations and Modification

Reduce number of tasks or problems	Provide student personal copy of outline, lecture material or teacher notes
Provide increased lighting	Provide preferential seating
Change angle of material	Use larger font size for printed material
Use overhead with high contrast	Provide sharper contrast with printed material
Read test questions aloud	Other

## Potential Assistive Technology Solutions

Colored paper	Audio recorder
Raised-line paper	Electronic books
Colored pens	CCTV / video magnifier
Large print globe and maps	Alternate Keyboard with enlarged keys
Tactile globe and maps	Text reader
Optical aids (e.g., hand-held magnifier, page magnifier)	Screen reader
Mini-book light	Speech recognition system
Large digital wall clock	Braille materials
Screen font adjustments	Braille answer sheets
Screen color contrasts adjustments	Braille translation software
Screen magnifier (mounted over screen)	Enlarged or Braille/tactile labels for keyboard
Screen magnification software	Braille keyboard and note taker
Talking calculator	Other



# HEARING

## Sample Tasks of Concern

Hear and follow verbal directions
Hear stories, books, etc., and answer comprehensive questions
Hear classroom discussion and participate in activity
Hear environmental sounds and respond appropriately (e.g., knocking on door, fire alarm, etc.)
Able to express self orally
Other

## Potential Accommodations and Modification

Reduce amount of work	Keep close proximity to the student
Provide visual material and demos whenever possible	Position within the classroom
Keep noise level to a minimum during activities	Use home/school communication book
Shut classroom doors/windows	Provide small group work
Use visual approaches whenever possible	Provide typed outline typed copy of lecture notes prior to delivery
Provide sign language/oral interpreter	Other

## Potential Assistive Technology Solutions

Headphones	Video Remote Interpreting Services (VRI)
Utilization of available PA system	Computer aided note taking (e.g., Real-time transcription)
Close-captioned videos	Computer/portable word processor
Closed Captioning	Personal amplification system/hearing aid
Real Time captioning	FM or Loop system
Signaling device	Infrared system
Flash alert signal on computer	TTY/TDD with or without relay
Phone amplifier	Other

# MOBILITY/SEATING AND POSITIONING

## Sample Tasks of Concern

Move about/ambulate about the classroom, school, and/or community
Complete travel within time frame allocated
Manipulate educational materials as required in assigned activities
Transfer independently
Maintain sufficient stamina to complete all daily activities
Maintain appropriate seating/positioning for participation in relevant activities
Other

## Potential Accommodations and Modification

Reduce amount of work requirements
Provide additional time to complete tasks
Provide adjustable classroom chairs, desks and tables
Provide preferential setting
Limit mobility requirements through careful scheduling of daily activities (e.g., order, location).
Peer and adult assistance
Change format of assignment (e.g., write answers only)
Other

## Potential Assistive Technology Solutions

Laptrays and equipment mounts
Adaptive classroom equipment (e.g., prone and supine standers, side lyers, etc.)
Adapted tables and desks
Walkers
Crutches/canes
Cushion systems and inserts
Positioning hardware(e.g., arm, leg, back, pelvic and trunk supports)
Adaptive and modular seating
Environmental adaptation (e.g., ramps, lifts and elevators)
Manual wheelchairs
Power wheelchairs
Transfer boards
Patient lifts
Other

# LISTENING AND ATTENDING

## Sample Tasks of Concern

Follow verbal directions
Listen to stories, books, etc., and answer comprehension questions
Listen to classroom discussion and apply information (e.g., answer questions, record notes, etc.)
Listen to teacher lecture and apply information (e.g., answer questions, record notes, etc.)
Listen to verbally presented information and retell with correct sequencing and facts
Listen to videos to gather information about current instructional topics
Respond to environmental stimuli appropriately (e.g., someone knocking on classroom door, bell ringing, fire alarm)
Other

## Potential Accommodations and Modification

Reduce amount of tasks and activities
Provide repetition of instructions
Use visual aids (e.g., picture symbols, diagrams, maps and video tapes) to illustrate key points.
Provide a written outline of lecture
Use a peer note-taker to record notes in class
Provide sign language/oral interpreter
Study carrel
Preferential seating
Use teacher proximity
Reduce/minimize distractions (e.g., visual, auditory, spatial, movement)
Break oral directions into smaller steps/segment
Use verbal prompts
Use gestures
Provide frequent breaks
Other

## Potential Assistive Technology Solutions

Headphones for clarity of sound and blocking of extraneous noises for cassette/television
Environmental alert system
Silent timer for self-monitoring
Closed captioning on non-caption ready instructional materials
Real time captioning class lecture and discussion
Closed captioning on class lecture and discussion
Audio-tape verbally presented information for repeated listening
Other

# RECREATION AND LEISURE

## Sample Tasks of Concern

Participate in play activities
Look at/read books or magazines and listen to music, etc.
Manipulate and/or operate toys and tools
Participate in social activities/cultural events
Participate in play activities
Look at/read books or magazines and listen to music, etc.
Manipulate and/or operate toys and tools
Other

## Potential Accommodations and Modification

Use verbal prompts
Provide adult/peer assistance
Model appropriate skills
Adaptive team sports
Provide frequent breaks
Other

## Potential Assistive Technology Solutions

Knobs for puzzles
Adaptive crayon holders
Adaptive music sheets with symbols
Raised line coloring sheets
Modify games, puzzles and toys
Switch accessible toys
Adaptive exercise equipment
Adaptive sports equipment
Adaptive gardening equipment
Adaptive video games
Adaptive playground equipment
Adaptive musical instruments
Other

# ACTIVITIES OF DAILY LIVING

## Sample of Tasks of Concern

Feed self-using appropriate utensils
Drink using appropriate utensils
Prepare simple snack
Prepare basic meal
Dress and/or undress self
Complete personal hygiene and grooming tasks (e.g., brushing teeth, hair, etc.)
Toilet self
Perform simple household chores
Transfer self in and out of bed
Exercise
Access Telephone
Drive automobile
Other

## Potential Accommodations and Modification

Change task length and/or complexity
Use verbal prompts
Model appropriate skills
Use picture cues and prompts
Allow additional time to complete tasks
Other

## Potential Assistive Technology Solutions

Adapted eating aids (e.g., grips for standard eating utensils, adapted cups/glasses, etc.)
Feeding machines
Time management aids
Reachers
Adapted dressing aids (e.g., button holers, pulls for zippers, Velcro fasteners, etc.)
Adapted cooking and food preparation aids (e.g., blender attached to power control unit, adapted pouring handles, etc.)
Adaptive household cleaning tools and appliances
Adaptive telephones
Adaptive lifting devices
Bathroom rails and adaptive faucet handles
Adaptive automobile equipment, (e.g., hand controls, left foot gas pedal, etc.)
Remote control systems
Adaptive household cleaning tools and appliances
Other

# TRANSITION TO ADULT LIFE

## Sample Tasks of Concern

Complete assigned tasks within designated timelines
Utilize tools, manipulative, and/or equipment to complete tasks
Complete single and multiple step tasks
Follow directions
Work independently
Participate cooperatively with peers and adults
Use effective communication skills
Prioritize tasks
Exercise responsible behavior, (e.g., prompt arrival & thorough task completion)
Balance check book
Other

## Potential Accommodations and Modification

Reduce complexity of tasks
Use verbal prompts
Use picture and word cues
Model appropriate skills
Use student self-monitoring sheets
Color-code task
Post Schedule of activities
Other

## Potential Assistive Technology Solutions

Adaptive tools for specific jobs
Auditory prompting with and without visual display
Vibrating and talking watches and timers
Computer with adaptive input devices and appropriate software to address vocational and independent living needs
Tablet or other portable devices
Other



# BEHAVIOR

## Sample Tasks of Concern

Maintain focus on work
Maintain non-disruptive behavior
Follow directions
Verbalize feelings appropriately
Interact positively with peers/adults
Transition successfully from one activity to another
Participate in group activities
Increase time on task
Remain on task through completion
Communicate need for clarification or further explanation

## Potential Accommodations and Modification

Provide flexible time schedule for completing work	Use visually stimulating material for assignments/learning presentations
Minimalize distractions and background noise	Utilize planned ignoring
Keep communication simple	Use proximity and touch control
Use note taker or scribe	Restructure assignments
Teach replacement behaviors	Break tasks into manageable steps
Support through routine	Utilize preferential seat assignments
Limit space and tools	Give directions in a variety of ways (e.g., oral and written)
Model expected behaviors	Allow frequent breaks
Utilize time-outs	Provide additional personnel support in the classroom
Post rules and expectations	Reduce amount of work or activities
Use a study carrel	Other

## Potential Assistive Technology Solutions

Noise blocking devices, (e.g., headphones and earplugs)	Provide assignment binder
Fiddle toys	Electronic calendar with prompts for scheduled events
Picture schedule/visual organizer	Audio Books
Color coding	Amplified listening system, (e.g., FM System)
Assignment binder	Software programs with mapping
Silent timer	Talking word processor software
Silent reminder	Other
Watch with alarm	