

بحوث ودراسات

هم النتائج التي توصلت إليها الأبحاث في مجال تعليم الرياضيات "

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التفكير وخصائصه:

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Convergent Thinking -١

Divergent Thinking -٢

Critical Thinking -٣

Creative Thinking -٤

Reasoning Thinking -٥

.(Inductive and Deductive)

Reflective Thinking -٦

Impulsive Thinking -٧

Abstract Thinking -٨

Concrete Thinking -٩

Cognitive Thinking

-١٠

Metacognitive Thinking ()

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❖ مستويات التفكير:-

. Complex Level Thinking

Basic level Thinking

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ما التفكير المركب:

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Metacognitive

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❖ أساليب تعليم مهارات التفكير:-

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Bono De " " الأسلوب المباشر في تعليم مهارات التفكير:

"CORT" " "

: (Cognitive Research Trust

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Math Forum
(2001 -)

Problem of the week
Math Forum

. Ask Dr. Math

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:(Grobley,1996) "

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ترحة (قائمة على الأنشطة التعليمية) في تنمية المفاهيم الرياضية ، والإبداع ، والمهارات الاجتماعية ، وقد أسفرت هذه الدراسة عن عدة نتائج منها :

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Representation

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:(Butkowski, j.,et.al.,1995) _____ " " (

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(Kassam,A.,1994) " _____ (

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Open Education

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Child-centered learning

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Van Hiele "

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Constructivism

Spatial visualization

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Power Point

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Reasoning

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Visual Activities

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Evaluative "

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Critical Thinking

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:(Keeler & Voxman) " " (

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Inductive thinking	- ١
Deductive thinking	- ٢
Symbolic thinking	- ٣
Probable thinking	- ٤
Relational thinking	- ٥
Formal Logic	- ٦
Spatial Perception and Representation	- ٧
Mathematical Proof	- ٨
Generalization	- ٩

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الدراسة : إعداد برنامج في التقدير التقريبي والحساب الذهني لتنمية كل من :

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Renninger,k.A.,Laura F.,and Feldman C. " _____ " (

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Problems of

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" Graphics Calculator "

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(**TI 92 & TI98** :

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(Education Program for Gifted)

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Mainipulative

[ثالثاً] نماذج لمشروعات وبرامج مرتبطة بتنمية أنماط التفكير

المختلفة في مجال تعليم الرياضيات:-

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.(NCTM , 2000)

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The Math Forum

" Bridging Research and practice "

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Developing Mathematical Ideas (DMI) :

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[أ] معايير الرياضيات المدرسية المرتبطة بتنمية أنماط التفكير

المختلفة في مجال تعليم الرياضيات:-

(NCTM,2000)

:- (K-12)

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-: (NCTM,2000)

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-: Communication Standard

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[ب] نماذج للإفادة من الإنترنت في تنمية أنماط التفكير المختلفة مثل :

Bridging Research and practice Project

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(Math forum) "

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2001 -

(Problem(s) of weak

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) Encouraging" Mathematical thinking" "
: Digital Dozen ":

<http://www.enc.org/weblinks/dd/archive/o,1577,10-2000>.

(٢) منهج لتعليم المعلم تنمية الأفكار الرياضية (DMI Developing Mathematical Ideas)

(K-6)

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-: (DMI project)

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(3D) (2D)

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Measuring Space in one,Two and Three Dimensions :

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Working with Data :

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(٣) مشروع "مدينة الرياضيات" (تجربة محلية):-

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-٣) _____ :

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[٤] تطوير رزمة تعليمية لتدريس مهارات التفكير:-

Developing a multimedia package for- Thinking skills

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Feedback

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Van "

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(Hiele (199

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Nemirovsky and Nobel"

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(STAD)

Students teams Achievement Divisio

Cooperative Inquiry

Jigsaw Strategy

Teems-Eames-Tournaments

Circles of Learning

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Math forum

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Encouraging Mathematical Thinking

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www.mathforum-org/wrap/index-htm

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Developing Mathematical Ideas

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www.edc-org/LTT/CDT/DMIGUR-htm

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www.Albayan.co.ae/albayan/200

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Ask Dr-Math

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www.forum-Swarthmore-edu/dr-math/drmath-high-htm

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Gallery of Interactive Geometry

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www.geom-umn-edu/apps/gallery-htm

Homework Center

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www.multnomah-Lip-or.us/Lit/homework/mathhc-htm

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