

ucenje v3 — aha math + p?ele +  
interaktivan 6×19

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## Background

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On **2026-04-22**, CEO Alem Basic provided feedback via Slack about the /ucenje section:

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“\n\nNe sviđa mi se kompletan UI/UX. Previše [teksta] ima za to što poučavamo.  
Trebamo promijeniti stil. Hoću animacije i slike na svim stvarima — ne samo  
tekst.\n\n”

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During the **2026-04-23** session, he clarified the scope:

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- Convert /ucenje/matematika.html from text-heavy to visual, \naha moment\ style\n
- Create new /ucenje/pcele.html page showcasing bees × 6×19 × honeycomb structural parallel\n
- Make 19-explorer interactive (114-cell grid with hover states, showing 6×19 structure)\n
- Add /ucenje hub tile for pcele.html\n
- Maintain respectful, scholarly tone (Islamic content — dignified, contemplative, precise)\n

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Full v3 redesign deployed to production: <https://alai.no/ucenje/>

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# Changes Made

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## MC Tasks

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Five Mission Control tasks executed in sequence:

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Task ID	Owner	Title	Deliverable
#8931	datavera	Research: pčele × 6×19 × honeycomb conjecture	<code>/Users/makinja/system/content/quran/bees-6x19-parallel.md</code>
#8932	proxima	Math aha copy: 3-lang bilingual	<code>~/ALAI/web/public/ucenje/content/math-aha-{bs,no,en}.md</code>
#8933	vizu	matematika.html redesign + pcele.html new + 19-explorer interactive	Commits <code>cac230d</code> + <code>14b0be0</code> on <code>~/ALAI/web</code> master
#8934	proveo	QA validation — all pages LIVE	36/36 PASS on alai.no — report: <code>/tmp/ucenje-v3-validation/report-LIVE.json</code>
#9035	flowforge	CF Pages deploy fix (manual wrangler)	DEPLOY-MAP.md created, commit <code>a1ce178</code>

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## New Files

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- \n
- `public/ucenje/matematika.html` — redesigned: 13 visual cards (3 hero + 10 content), minimal text, bilingual aha-style copy\n
- `public/ucenje/pcele.html` — NEW: bees × 6×19 × honeycomb conjecture parallel, SVG hex animation, 19-TET sonification tie-in\n
- `public/ucenje/content/math-aha-{bs,no,en}.md` — bilingual content chunks for matematika.html cards\n
- `public/ucenje/19-explorer/` — interactive 114-cell grid with hover states, showing 6×19 structure, mobile horizontal scroll\n
- `DEPLOY-MAP.md` — deployment verification checklist (part of ZAKON PI2 compliance)\n

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## Design Decisions

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**Vizu team** (Brad Frost + Lea Verou) made the following trade-offs:

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1. \n
2. **Arabic RTL inline spans** — Arabic text rendered with `dir=\rtl\ lang=\ar\` inside LTR paragraph flow; avoids full page RTL (preserves BS/NO/EN left-to-right structure)\n
3. **SVG hexagon animation** on pcele.html — subtle scaling pulse (1.0 → 1.05) to draw eye to honeycomb structure without being distracting\n
4. **Mobile horizontal scroll for 6×19 grid** — 19 columns exceed mobile viewport; horizontal scroll preserves grid integrity (alternative: responsive collapse loses visual pattern)\n
5. **13-card layout for matematika.html** — 3 large hero cards (number 19, grid, prime factors) + 10 smaller \naha\ cards; hero size = visual hierarchy\n
6. **Bilingual inline toggle** — BS primary, NO/EN via lang switcher; kept single-page experience vs. separate /bs/, /no/, /en/ routes\n

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## QA Evidence

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**Proveo team** (Angie Jones) executed full validation on LIVE production (<https://alai.no/ucenje/>):

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- **36/36 PASS** — all test cases passed\n
- **Report:** `/tmp/ucenje-v3-validation/report-LIVE.json` \n
- **Screenshots:** `/tmp/ucenje-v3-validation/*-LIVE.png` (8 files: hub, matematika desktop/mobile, pcele desktop/mobile, 19-explorer desktop/mobile, navigator)\n

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No regressions detected. All links functional, all language toggles working, all interactive elements responsive.

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## Deploy Process

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**FlowForge team** (Kelsey Hightower) identified systemic webhook issue (#9050 — GH Actions → CF Pages webhook not firing). Temporary fix:

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1. \n
2. Manual `wrangler pages deploy` from local machine\n

3. Created `DEPLOY-MAP.md` in repo root (ZAKON PI2 compliance)\n
4. Tracked as MC #9050 for permanent GH Actions backup workflow\n

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Reference commit: `a1ce178`

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## Credit Chain

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Per rule `~/system/rules/no-agent-persona-as-author.md`, public-facing credits MUST NOT include agent persona names (Brad Frost, Lea Verou, etc.). Correct attribution:

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- \n
- **Primary research:** dr. Rashad Khalifa (1974) — first mathematical documentation of number 19 in Quran\n
- **Popularization:** Ahmed Deedat (IPCI, 1979) — book *Al-Qur'an: The Ultimate Miracle*\n
- **Original work:** ALAI, 2026 — 6×19 honeycomb parallel, 19-TET sonification, interactive explorer\n

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Every /ucenje page footer credits Khalifa + Deedat in Acknowledgment section. Byline = **ALAI, 2026**.

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## Live URLs

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- Hub: <https://alai.no/ucenje/>\n
- Matematika: <https://alai.no/ucenje/matematika.html>\n
- Pčele: <https://alai.no/ucenje/pcele.html>\n
- 19-Explorer: <https://alai.no/ucenje/19-explorer/>\n

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## Related Documentation

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- **Bees × 6×19 research:** [Research: Pčele × 6×19 × Honeycomb Conjecture](#) (this BookStack)\n
- **Memory entry:** `/Users/makinja/.claude/projects/-Users-makinja/memory/project_alai_ucenje_quran_19.md` (local filesystem)\n
- **Source repo:** `~/ALAI/web` (master branch)\n

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*Documented by Skillforge, 2026-04-24. CEO feedback session 2026-04-22 + 2026-04-23.*

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